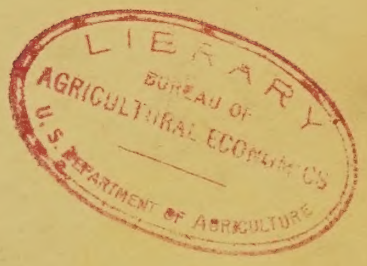
U. S. Department of Agriculture
Resettlement Administration
Washington, D. C.

SOME LAND USE PROBLEMS
in
NORTHWESTERN SOUTH DAKOTA



by

John Muehlbeier
Assistant Land Planning Specialist
and
Ralph E. Johnston
Land Planning Specialist

Land Use Planning Section
Land Utilization Division, Region VII
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T. S. Thorfinnson, Regional Chief
Arthur P. Nelson, Regional Supervisor, Land Classification Unit
Harry A. Steele, Regional Supervisor, Area Policies and Programs Unit

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The authors are also indebted to other members of the Land Use Planning Section for their assistance in the collection of the data.

SUMMARY AND CONCLUSIONS

This study is intended to aid in determining proper use of land in selected distress areas in western South Dakota, in order to conserve human and natural resources.

Small areas were selected to permit thorough study. (Fig. 1). No attempt will be made to delineate the region to which conclusions from the selected areas apply, until a later report. These selected areas may or may not be typical of the northwestern part of the state.

A reconnaissance survey of the land in Area 1, now used for crop production, revealed that nearly half of it is suited only for grazing. This classification was based on physical characteristics of the soil. No consideration was given to certain economic factors which also affect the use of land.

The land now used for grazing was not specifically classified to determine if any of it could also be used for crop production. However, a detailed soils and land use survey of one township in Area 1, indicates that nearly all land suited for that purpose is already being used for crop production.

The type and size of operating unit best suited to this general region, because of the physical limitations, is largely determined by the relationship between the amount and distribution of land suitable for crop production and that suitable only for

grazing. Consequently, ranching, and combinations of farming-ranching, seem best suited to the area. Very little crop farming should be practiced and that only on the better land. In this analysis such economic factors as demand, prices, and the like, were not specifically considered.

Based on the above relationship, nearly half of the present operating units in Area 1 need additional crop land or grazing land, or both to provide a living for an average family. Naturally if units now too small are enlarged, many other small units will be displaced. No attempt is made in this report to evaluate alternative opportunities in other localities for those operators displaced. This problem warrants a special study, in which also the social aspects associated with the re-distribution of the people must be considered.

Areas 2 and 3 were not analyzed in detail, but from observations made, it seems that they are reasonably similar to Area 1.

The present maladjustments described are not all of recent origin. When the region was homesteaded, maladjustments were created by the nature of the agriculture which developed. Distress did not result at that time because of such compensating factors as favorable weather, new land, private resources, etc.

The agricultural economy, prior to 1900, was strictly grazing. However, the livestock business frequently suffered because

of uncontrolled grazing and lack of winter feed. Homesteading, resulting in closer settlement, created a new agricultural pattern. Large cattle outfits were replaced by smaller ranches, combinations of farming-ranching, and farms.

The establishment of this intensive agriculture was encouraged by the homestead laws and stimulated by a temporary combination of favorable weather and good markets.

Since then many of the inhabitants have recognized that this is a semi-arid region, subject to great variation in climate. As they recognized this fact, many made an adjustment to larger units and to a type of agriculture better suited to the natural conditions of the region. This necessary adjustment is not complete, because other operators expected the return of the favorable condition which they believed to be normal. In the meantime, their private resources were dissipated, and alternative opportunities in other areas became more restricted. Continuance of farming operations unsuited to the region and resulting in failure, was made possible in many instances, largely by the credit policies of the State and Federal Government.

There are some farm operators who still do not recognize the physical and economic limitations of the region. Neither are these limitations adequately recognized in all of the present governmental policies and programs.

At the present time about three-fourths of the land in these selected areas is used for grazing, the rest is used for crop production. Nearly half of the crop land is in wheat. The intricate soil pattern of the land used for crop production results in a complicated field arrangement, which in turn contributes to making farming operations inefficient.

The production of cattle and of sheep are the chief livestock enterprises. The grasses in the area are sufficient for grazing requirements, but controlled use is essential. During normal conditions the water supply available for livestock has been adequate. Even during periods of drought it seems that there would be sufficient water for the livestock of a grazing economy, as well as enough land suitable for feed crop production.

In the enlargement of operating units, it has become necessary for operators to deal with many different landowners. The ownership pattern has remained complicated, and many operators, in order to enlarge their operations, have been forced to secure additional land not contiguous to the tracts on which their headquarters are located. This factor contributes further to the instability of farming operations.

The intensive farming pattern which has developed has created an institutional pattern too costly for the limited productivity of the land. Later in order to pay taxes, along with other costs, crop production was expanded still more, and much land

unsuited for crop production was used for that purpose. Once the land had been put in crops it was difficult to correct the maladjustment, and cultivation of these tracts has continued. Payment of taxes has been difficult, and consequently the counties own increasing amounts of tax deed land. An analysis of assessments revealed that the poorer the land the more it tends to be over-assessed, an additional factor contributing to tax delinquency and improper land use.

Within this region it seems that encouragement of many of the natural adjustments already taking place will ultimately result in a more stable agriculture. The desirable adjustments can be stimulated by acquainting the public with the limitations of the region.

In addition, in view of the fact that the natural adjustment is slow, and that emergency measures to relieve destitute families are costly, group action or governmental assistance at times is justifiable in order to facilitate the adjustment.

This report is not presented as an exhaustive treatment of the subject. It is merely intended as an aid in focusing attention on a few of the major problems.

SOME LAND USE PROBLEMS in NORTHWESTERN SOUTH DAKOTA

INTRODUCTION

Distress in the Great Plains during recent years, requiring emergency measures to aid poverty stricken families, rescue livestock and provide other aid to agriculture, is necessitating thorough study of that area. Droughts and adverse economic conditions have contributed to the distress, but it is also apparent that certain land use problems have long been developing. Droughts can not be prevented, but it is evident that the agriculture failed to adapt itself to the natural conditions of the Great Plains. It is with these necessary adjustments in the agricultural economy that this report is concerned.

Since such a large part of South Dakota lies within an area apparently requiring major adjustments in land use, only a relatively small part of the State could readily be studied at one time. For this study three small areas were selected. These are T. 18 to T. 23 inclusive, R. 14, Perkins County; T. 19, R. 18, Corson County; and T. 12 to T. 13 inclusive, R. 19, Ziebach County. They will be referred to as Area 1, Area 2 and Area 3, respectively, Fig. 1.

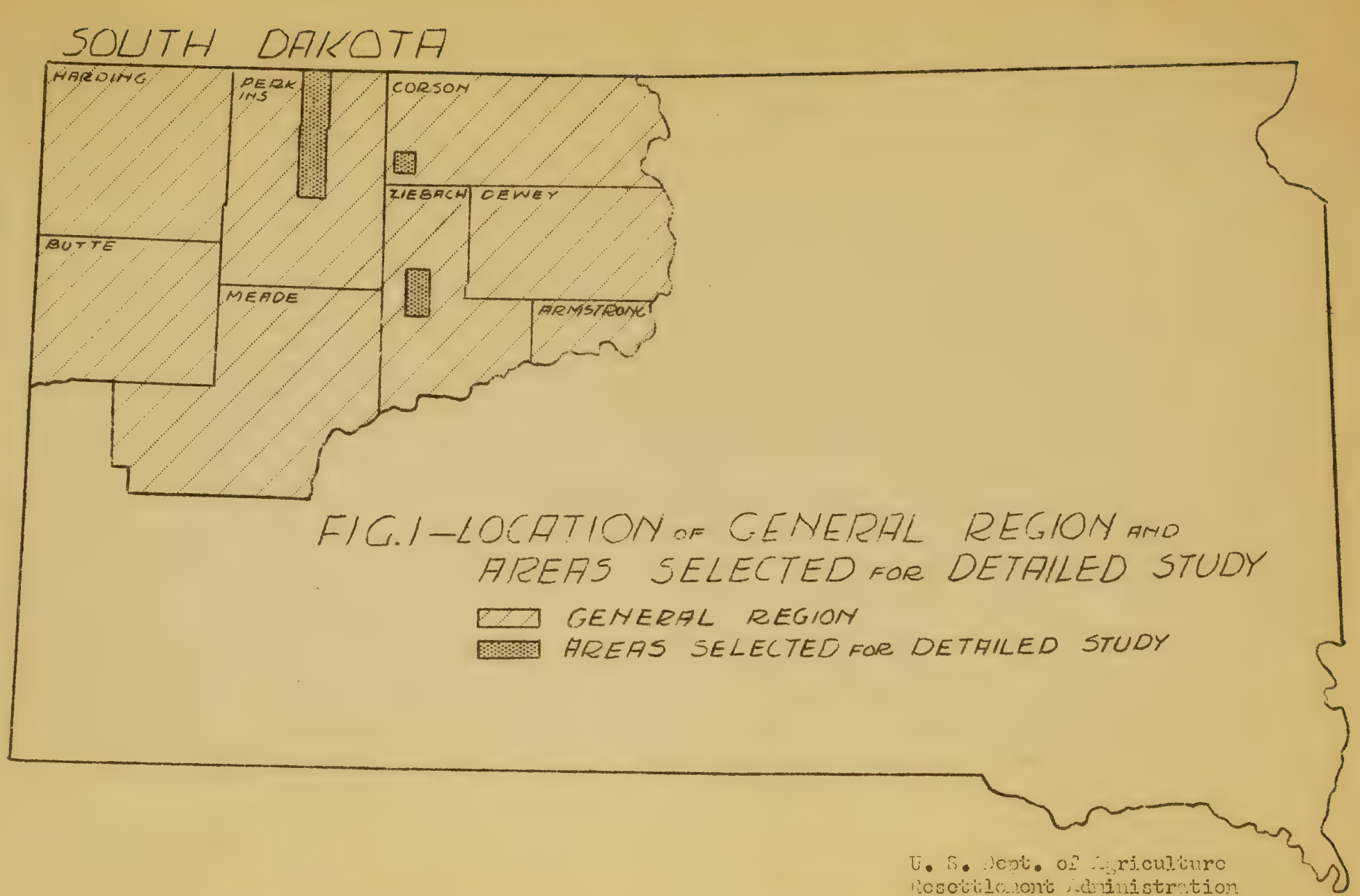

FIG. 1—LOCATION OF GENERAL REGION AND AREAS SELECTED FOR DETAILED STUDY

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The three areas presented are a part of an "Area Study", including Harding, Butte, Meade, Perkins, Corson, Ziebach, Dewey and Armstrong counties. These small areas may or may not be typical of the entire eight counties in all respects. However, they do represent certain parts of the eight counties.

PURPOSE

The general purpose of this study is to aid in the analysis of the distressed conditions existing within certain areas of western South Dakota in order to determine proper use of the land and thereby contribute to the conservation of human and natural resources.

More specifically, this study includes an analysis of such factors as the amount of land cultivated which is naturally better adapted for grazing, number of operating units inadequate as to type and size to afford a living for an average family, taxation problems, and other related factors.

PROCEDURE

In the Area Study previously referred to, eight northwestern South Dakota counties were somewhat arbitrarily selected. Within this general region areas known to be in distress, based on knowledge of the state, were first delineated. After that, available basic background data were studied to delineate still further specific areas.

These basic data included the ownership pattern, tax status, public subsidies, soils, erosion, etc. Field trips were then made and three areas selected to be studied, observing such factors as farm improvements, abandonment, type of farm, soil erosion, etc.

The areas having been selected, a questionnaire (schedule) was secured from each operator (rancher or farmer) within the area to secure a description of his operating unit (ranch or farm), and his operations. There were 128 schedules secured from Area 1, 21 from Area 2, and 34 from Area 3. From these schedules information was secured such as crop cover, land use, crop and livestock organization, type and size of unit, and certain other personal data.

A detailed soils survey was made of one township in Area 1. In addition, a reconnaissance survey was made of all crop land in Area 1. This physical description was secured along with the above mentioned economic data to determine the degree of maladjustment in land use. A ten year tax history was secured for each tax tract in Area 1. The assessed value of the land in one township of Area 1 was related to the productivity ratings obtained from the detailed soils survey.

DESCRIPTION OF GENERAL REGION

The climate[1/] of the general region is typically semi-arid with extreme variation in rainfall, temperature, and wind movement. The average length of the growing season is 120 to 130 days, but in 4 years out of 5 there are only 100 to 110 frost free days. Winter temperatures average 15 degrees to 20 degrees and fall as low as -40 degrees to -50 degrees Fahrenheit. Summer temperatures average 65 degrees to 75 degrees and may rise to over 100 degrees for short periods. The mean annual rainfall is about 14 to 16 inches, but it is subject to extreme variation, Fig. 2 shows the annual precipitation for several selected stations.

The topography is almost wholly the result of erosion and ranges from the level tabular uplands to the hilly well dissected areas adjacent to main streams. In places, the surface is characterized by extended escarpments and butte formations.

The normal soil of the region is a well developed dark brown soil. The loams and silt loams have a mellow brown surface soil underlain at three to five inches by brown soil having a columnar structure extending to a depth of eighteen to twenty-four inches. The parent material may consist of either residual sandstone or clay.

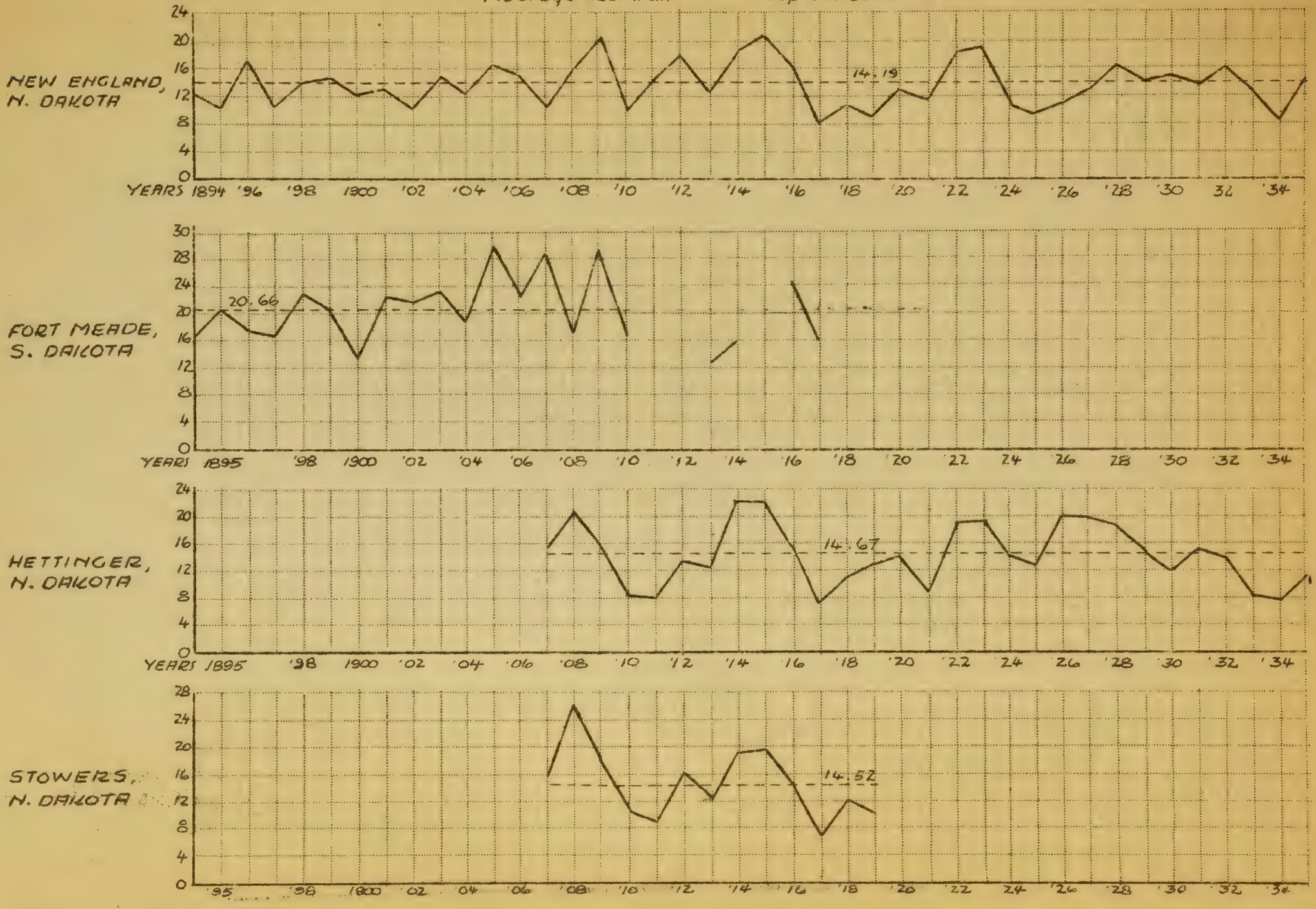
1/ Atlas of American Agriculture -- Harbut

FIG. 2 - ANNUAL PRECIPITATION IN FOUR SELECTED STATIONS IN N. & S. DAK.

INCHES of RAINFALL

---- Average Rainfall

Gap indicates no data available



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The rolling and hilly-upland is characterized by a brown soil having a shallow solum. Numerous soils developed from local and general alluvial material, which together with upland soils, result in an intricate pattern of soil types. This is illustrated in Figure 3, a detailed soils map, Liberty township, Perkins County.

The native mixed grasses of the grazing land occur in several vegetative types closely associated with soil types. Although varying in quality and quantity, the grasses, in general, offer excellent grazing. On the level to gently rolling upland and well developed soils, the major dominant and most important species from a grazing standpoint are Blue-Gramma, Needlegrass, Western Wheat Grass, and Nigger Wool. Little Blue-stem occurs frequently on the hilly land, while Big Blue stem is found on the slopes of narrow draws where the moisture supply is more favorable. Sandgrass is frequent in occurrence on sandy ridges and slopes.

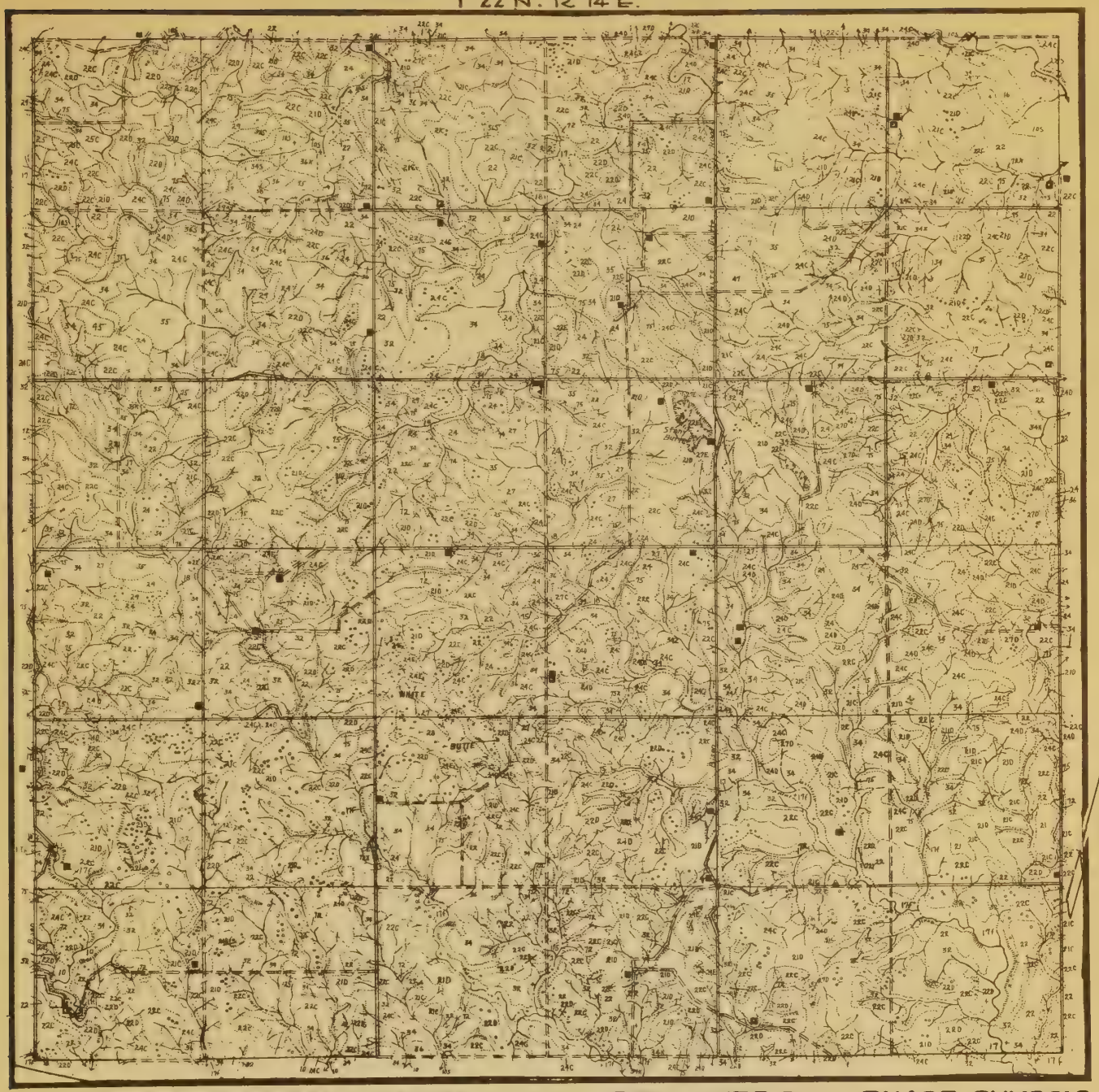
The original agricultural economy of this area was strictly grazing. The range was dominated by large cattle companies which had unlimited and unrestricted use of the land. The cattle business prospered for a time, but soon suffered severely due to unregulated grazing and lack of winter feed in a region of frequent drought and severe winters.

The coming of the homesteader changed the agricultural pattern. The homesteader brought with him a farming psychology from a more humid region; in addition, the homestead laws practically

FIGURE 3

SOIL MAP

LIBERTY TWP. PERKINS CO. S.DAK.
T 22 N. R 14 E.



CONVENTIONAL SIGNS

- CREEK WITH PERMANENT WATER HOLES
- INTERMITTENT DRAIN NON-CROSSABLE BY MACHINERY
- INTERMITTENT DRAIN CROSSABLE BY MACHINERY
- LAKE OR RESERVOIR
- SPRING
- ERRATIC SURFACE GRAVEL OR STONES
- ESCARPMENT
- ROCK OUTCROP
- EXCESS SOLUBLE SALTS
- SMALL SCABBY AREAS
- DAM
- MINE OPENING
- SOIL TYPE BOUNDARY
- GRADED ROAD UNSURFACED
- UNGRADED ROAD
- BRIDGE
- SECTION LINE
- OCCUPIED FARMSTEAD
- UNOCCUPIED FARMSTEAD
- SCHOOL

SOIL TYPES AND PHASE SYMBOLS

DEEP SOILS IN UPLANDS · 32 · 34 · 35 · 36 · 38 · 45 · 47 – 7
SHALLOW SOILS IN UPLANDS · 21 · 22 · 24 · 25 · 27
SOILS FROM LOCAL ALLUVIUM · 71 · 72 · 74 · 75
SOILS FROM GENERAL ALLUVIUM · 16 · 17 f · 17 · 18 · 10
ROUGH BROKEN AND STONY LAND · 28 · 29
k · SLIGHTLY SOLONIZED PHASE
s · STRONGLY SOLONIZED PHASE

SLOPE

NO LETTER · LESS THAN 5 PER CENT
C · 5 TO 12 PER CENT
D · 12 TO 25 PER CENT
E · OVER 25 PER CENT

scale of miles

PREPARED BY LAND USE PLANNING SECTION
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made it necessary for him to attempt farming. Soon the large cattle companies were replaced by smaller ranches, combination farms and ranches, and farms.

Small homesteads greatly encouraged the concentration of population. This increase in population created an institutional pattern which required higher taxes than the land has been able to pay.

Intensive farming stimulated by liberal credit and for a few years, a combination of favorable weather and good markets all contributed to an agricultural development that could sustain itself only under the most favorable conditions. When conditions returned to normal and more recently to below normal, distress resulted and federal assistance was necessary.

DESCRIPTION OF SELECTED AREAS

Homesteading in Area 1 started in 1902 and reached its peak in 1908 as shown in Fig. 4. In the other two areas, it started a few years later.

In Area 1, over 800 homestead entries were filed between 1902 and 1909, mostly on quarter sections. It is significant to note that this occurred during a period of above normal rainfall, as shown in Fig. 1. At the present time there are 130 operators in the area, of whom only 40 are homesteaders. (Additional tenure data is given in Table 9.)

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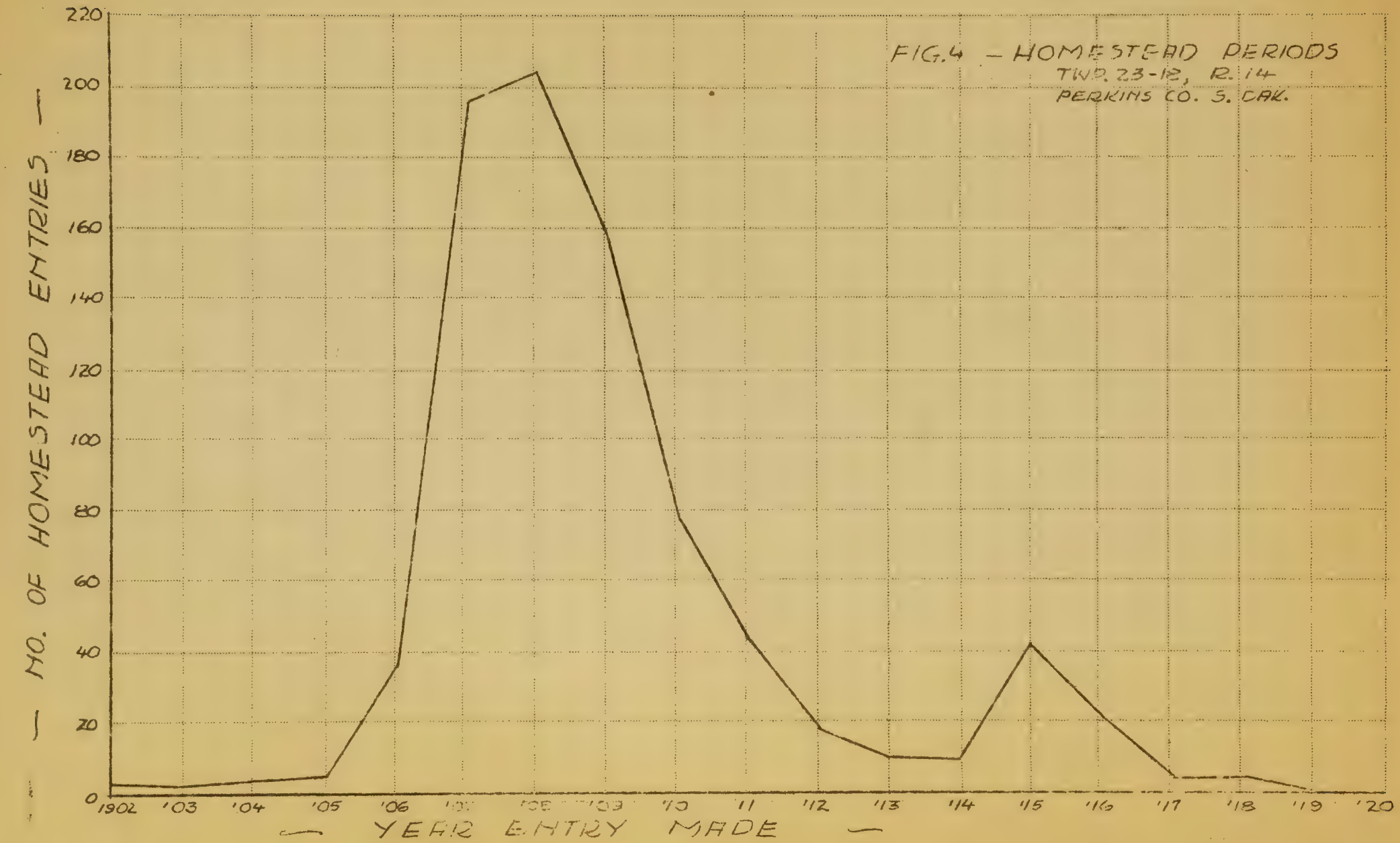
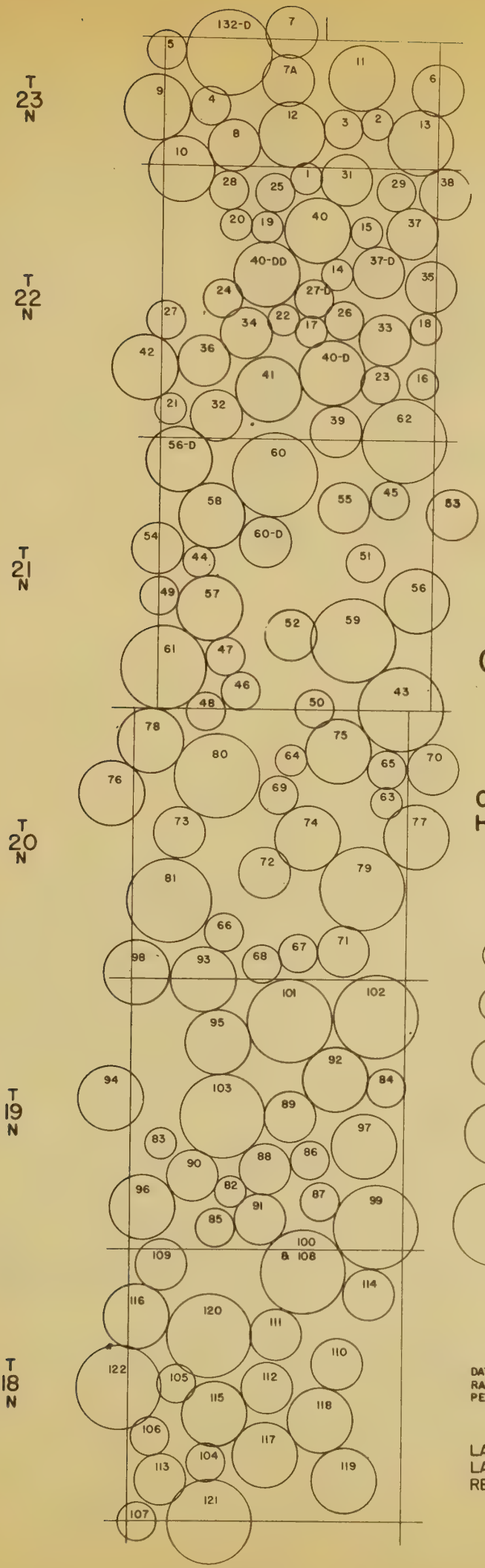


Quarter section farms were originally contemplated by the homesteader. A partial adjustment to necessarily larger units, and to a type better suited to the area, has since taken place. However, many small uneconomic units remain, especially in Township 22 and 19. This variation and range in size of operating units is shown in Fig. 5. The location of the small units in relation to the use suitability of the land may be seen in Fig. 16. Fig. 6 shows the operating units mapped in place. In the adjustment to larger units it was necessary for many operators to use land not contiguous to their headquarters, which does not permit stability and efficiency in the farming operations. In Fig. 12 is also shown the complicated ownership pattern resulting from settlement on small units.

The operators from whom schedules were obtained reported approximately three-fourths of their operated acreage in grass and one-fourth in crops. The acreage in grass varied from 70 per cent in Area 1 to 75 per cent in Area 3, and 80 per cent in Area 2, Table 1. However, the range in the proportion of grass and crop land used by individual operators is much greater, Fig. 7, which also shows the range in size and type. There are 47 units less than 570 acres in size, 50 units from 670 to 1200 acres, and 31 over 1,200 acres, Table 5. The effect of quarter section homesteading is still apparent.

FIGURE 5



OPERATING UNIT PATTERN

LEGEND

CIRCLES ENCLOSE HEADQUARTERS OF FARM OR RANCH

OPERATING UNIT SIZE GROUPS

- 1-259 ACRES
- 260-569 ACRES
- 570-889 ACRES
- 890-1859 ACRES
- 1860 ACRES AND OVER

SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23N, RANGE 14E PERKINS COUNTY, SOUTH DAKOTA, 1936

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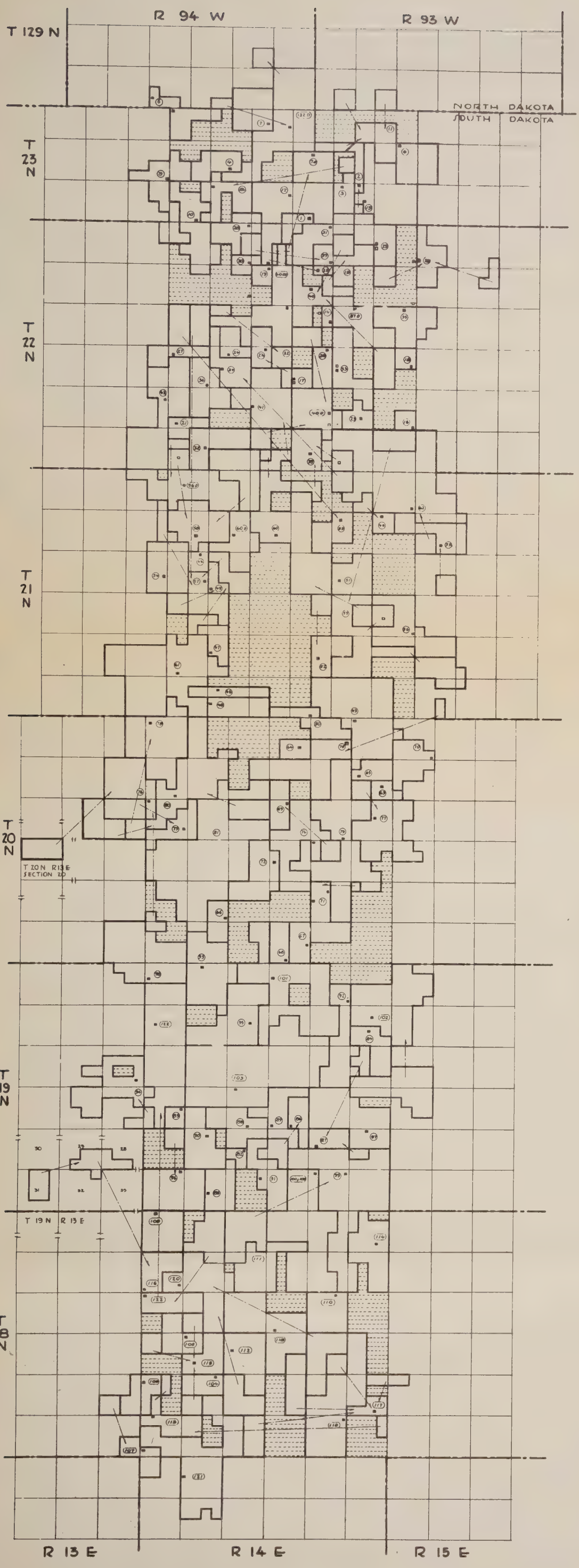

OPERATING UNITS MAPPED IN PLACE

· LEGEND ·

- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- OCCUPIED FARMSTEAD
- UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

PREPARED BY
LAND USE PLANNING SECTION
LAND UTILIZATION DIVISION
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REGION VII
U.S.D.A.

FIGURE 6

Table 1

Acreage in Grass and Crops

Kind of use	Area 1*		Area 2**		Area 3***	
	Acres	%	Acres	%	Acres	%
Total	118,946	100	27,318	100	27,312	100
Land in Grass (Incl.pasture, wild hay, farmstead, etc.)	82,706	70	21,879	80	20,438	75
Land in Crops (Incl. idle and fallow)	36,240	30	5,439	20	6,874	25

* Total of 128 operating units in T.18-23, R. 14, Perkins County, 1936
** " " 21 " " " T.19,R.18, Corson County, 1936
*** " " 34 " " " T.12-13, R.19, Ziebach County, 1936

Of the land under cultivation, 46 per cent in Area 1, 40 per cent in Area 2, and 31 per cent in Area 3 was in wheat. Other crops range from 1 per cent to 12 per cent of the cultivated land as shown in Table 2. The idle and fallow acreage varied from 23 per cent in Area 1 to 30 per cent in Area 2, and 43 per cent in Area 3. The high percentage of idle and fallow acreage was largely due to drought conditions the last few years.

Table 2

Acreage of Various Crops

Crop	Area 1*		Area 2**		Area 3***	
	Acres	%	Acres	%	Acres	%
Total	36,240	100	5,439	100	6,874	100
Wheat	16,752	46	2,175	40	2,133	31
Barley	3,708	10	396	7	321	5
Corn	2,901	8	245	5	113	2
Oats	2,158	6	636	12	601	9
Legume Hay	1,315	4	18	-	95	1
Miscellaneous (rye,flax,etc.)	959	3	332	6	629	9
Idle and fallow	8,447	23	1,637	30	2,982	43

* Total of 128 operating units in T.18-23, R.14, Perkins County,1936
** " " 21 " " " T.19, R.18, Corson County, 1936
*** " " 34 " " " T.12-13, R.19, Ziebach County,1936

Table 3 indicates that the wheat acreage remained near normal in all three areas, ranging from 93 per cent to 105 per cent. The oat acreage ranged from 61 per cent to 81 per cent of normal, and barley from 75 per cent to 100 per cent. Corn acreage was reduced more than any of the other grain crops, being only 12 per cent of normal in Area 3, 29 per cent in Area 2, and 53 per cent of normal in Area 1. Legume hay ranged from 5 per cent to 59 per cent of normal. Corn and legume hay acreages were the most reduced by drought.

Table 3

Present Acreage of Principal Crops Compared to Usual

Crop	1936 Per cent of Usual Acreage		
	Area 1*	Area 2**	Area 3 ***
Total	85%	77%	67%
Wheat	98	106	93
Oats	73	81	61
Rye	-	-	97
Barley	100	77	75
Corn	53	29	12
Legume Hay	59	5	19

* Total of 128 Operating units in T.18-23, R. 14, Perkins County, 1936
** " " 21 " " " T.19 R.18, Corson County, 1936
*** " " 34 " " " T.12-13, R.19, Ziebach County, 1936

Previous maps have indicated the range in size of units. Table 4 shows the distribution of the acreages of various crops per farm, by size groups. As graphically illustrated in detail in Fig. 7, this table shows that larger units have more crop land but the increase in the amount of grass is proportionately greater than that in the amount of crop land. Wheat is the important crop in all size groups.

The intricate soil pattern previously pointed out, with the limited amount of land available for cropping purposes, has created a rather complicated field arrangement of crop land, as illustrated in Fig. 8. This map covers the same township for which a soil map was previously shown.

Table 4

Acreage in Grass and Various Crops, Average Per Farm, by Size Groups

Size Groups	No. of Opert'g Units	Average Acreage Oper-ated	In Grass	In Crops	Average Acreage of Various Crops: Wheat	Bar-ley	Corn	Oats	Leg-ume	Misc.	Idle & Fallow
				Area 1*							
Average	--	929	646	283	131	29	23	17	10	7	66
80-174	8	145	57	88	38	6	12	5	10	3	14
175-259	8	227	123	104	47	2	15	8	7	2	23
260-399	14	300	164	136	58	12	10	3	2	2	49
400-569	17	505	315	190	80	17	15	13	3	7	55
570-699	16	640	420	220	98	26	20	15	1	1	59
700-889	17	782	502	280	133	32	29	15	10	10	51
890-1200	17	1063	673	390	200	33	28	28	4	10	87
1201-1859	14	1412	988	424	190	60	30	21	17	16	90
1860-2459	9	2131	1507	624	308	67	38	34	29	16	132
2460-3399	8	2825	2440	385	156	27	28	25	44	7	98
				Area 2**							
Average	--	1302	1042	260	104	19	12	30	1	16	78
320-480	4	421	324	97	35	4	12	16	0	0	30
481-960	6	837	526	311	140	12	11	33	0	13	102
961-1440	5	1249	972	277	109	17	14	44	4	13	76
1441-1600	3	1600	1421	179	95	35	0	10	0	21	18
1601-3520	3	3148	2747	401	122	40	20	40	0	22	157
				Area 3***							
Average	--	804	601	203	63	9	3	18	3	19	88
240-480	13	381	224	137	41	10	6	20	0	10	50
481-892	8	752	439	313	99	18	3	22	5	38	128
893-1280	9	1073	856	217	77	5	2	16	6	10	101
1281-2120	4	1741	1577	164	28	0	0	5	0	29	102

* Total of 128 operating units in T.18-23, R.11, Perkins County, 1936
** " " 21 " " " T.19, R.18 Corson County, 1936
*** " " 34 " " " T.12-13, R.19, Zicbach County, 1936.

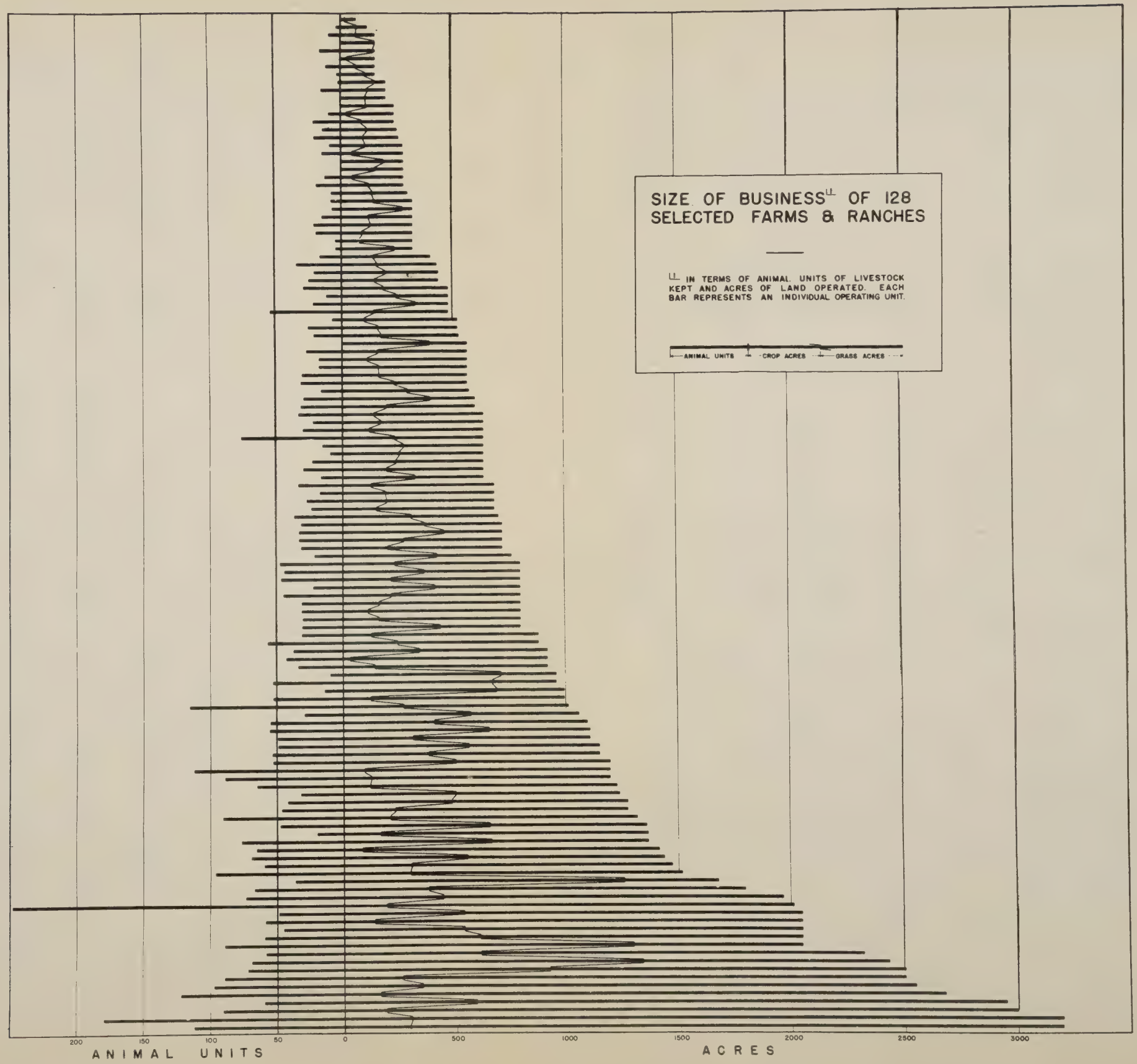
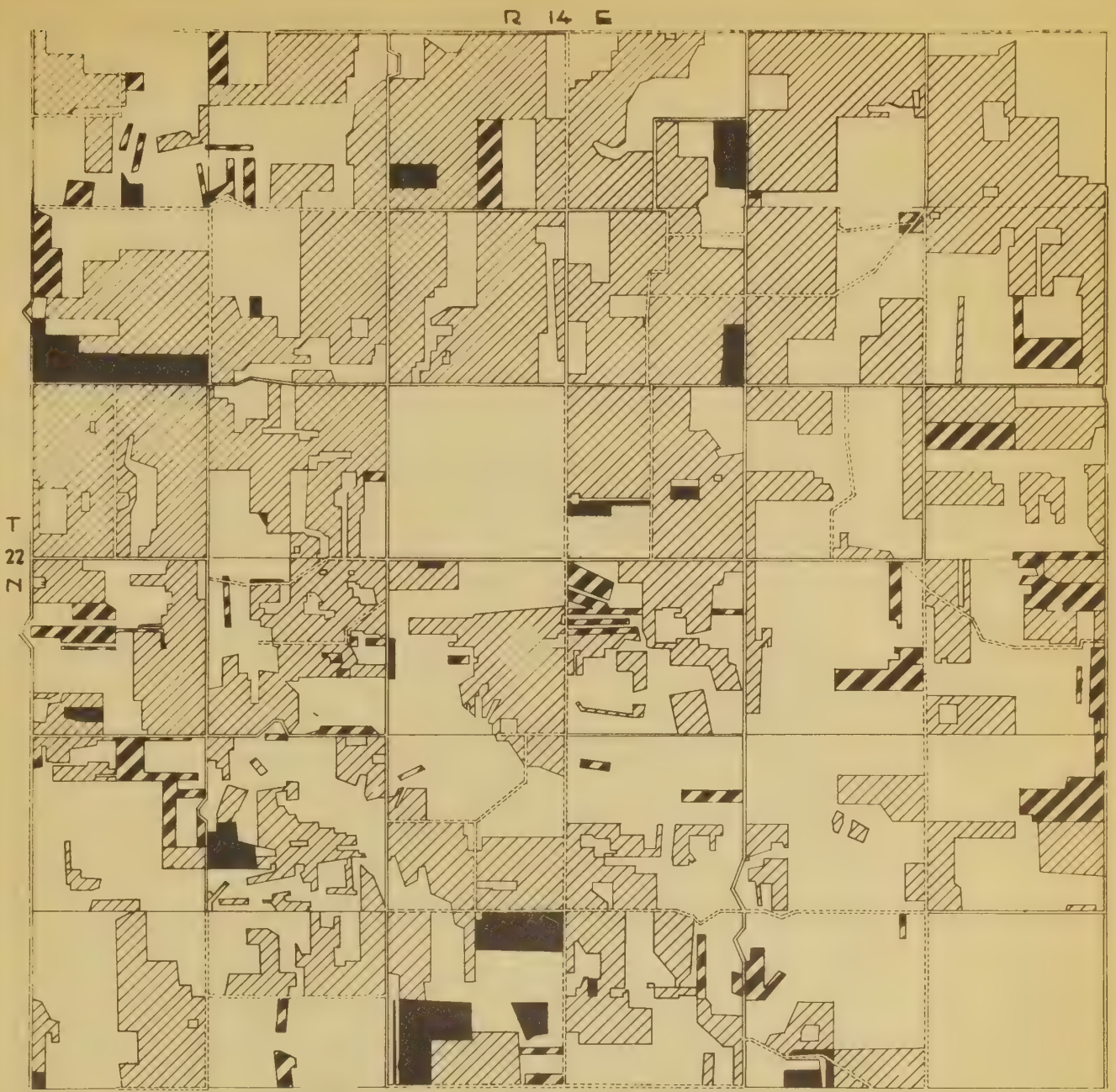

SIZE OF BUSINESS[1] OF 128 SELECTED FARMS & RANCHES
[1] IN TERMS OF ANIMAL UNITS OF LIVESTOCK KEPT AND ACRES OF LAND OPERATED. EACH BAR REPRESENTS AN INDIVIDUAL OPERATING UNIT.
ANIMAL UNITS
CROP ACRES
GRASS ACRES
200
150
100
50
0
500
1000
1500
2000
2500
3000
ANIMAL UNITS
ACRES

FIGURE 8



LEGEND

- NATIVE VEGETATIVE COVER
- LAND FORMERLY CROPPED NOW REVEGETATED
- LAND FORMERLY CROPPED NOW HAVING SPARSE GRASS COVER
- LAND NOW USED FOR CROPPING

PRESENT LAND USE-1936

SCALE of MILES

0 1

DATA FROM PLANETABLE SURVEY – LIBERTY TOWNSHIP – PERKINS COUNTY SOUTH DAKOTA – 1936

PREPARED BY

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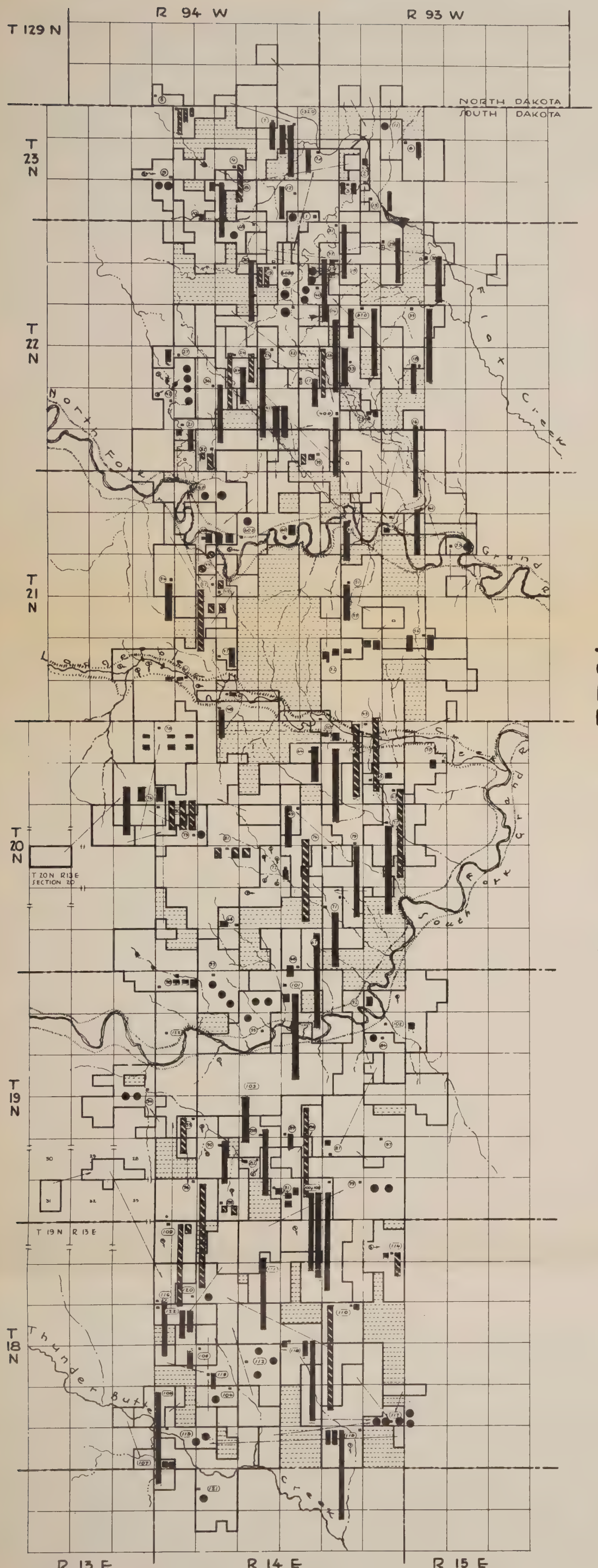
REGION VII
LAND USE PLANNING SECTION
LAND UTILIZATION DIVISION

Cattle and sheep production are the chief livestock enterprises, Table 5. The livestock numbers given were those reported in the spring and summer of 1936. Some reduction has already been made at this time because of drought conditions, but they were not as drastic as the reduction of that fall and winter. This reduction is shown in Table 6, and is especially significant because livestock numbers did not decrease the same proportion. The number of milk cows remained from 67 to 80 per cent of normal, beef cows and other cattle ranged from 25 to 72 per cent of normal, and in many instances sheep numbers increased. Livestock numbers are generally larger in the larger units.

Drought conditions made crop production practically impossible and livestock production, which depends on crops, but more largely on grass and water, has likewise suffered. Fig. 9, which shows the water supply, indicates a shortage of some units in area 1, but adequate water is available for the type of agriculture best suited to the area.

From the material presented it is evident that the principal income is from livestock and wheat. Cattle and sheep are the principal source of livestock income; hogs and chickens are kept mainly for home consumption.



SOURCE AND TYPE OF WATER SUPPLY IN RELATION TO OPERATING UNIT PATTERN

LEGEND.

WELLS

DEPTH	CAPACITY
SCALE IN FEET: 0, 100, 200'	ADEQUATE ●
	INADEQUATE ⊘
	DEPTH KNOWN / DEPTH UNKNOWN

- DAM
- DIVERSION DAM
- SPRING
- BOUNDARY of GEN. ALLUVIUM AND UPLANDS
- RIVER
- CREEK
- DRAINS WITH SEASONAL WATER SUPPLY
- DRAINAGE WAY
- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- ▪ OCCUPIED FARMSTEAD
- ▫ UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

PREPARED BY
LAND USE PLANNING SECTION
LAND UTILIZATION DIVISION
RESETTLEMENT ADMINISTRATION
REGION VII
U.S.D.A.

FIGURE 9

Table 5

Livestock Numbers, Average Per Farm, By Size Groups

Size Groups	No. of Opert'g Units	Milk Cows	Beef Cows	Other Cattle	Brood Sows	Breed'g Ewes	Other Sheep	Lay. Hens	Horses
				Area 1*					
Average	--	7	5	15	1	40	16	38	5
80-174	8	1	0	1	-	2	2	16	2
175-259	8	1	2	3	1	10	-	21	2
260-399	14	3	1	3	-	0	-	20	2
400-569	17	7	1	10	1	1	2	32	4
570-699	16	7	2	9	1	20	23	34	4
700-889	17	10	1	16	2	14	5	49	5
890-1200	17	10	2	14	1	82	31	41	8
1201-1859	14	10	5	27	3	49	44	56	9
1860-2459	9	8	17	14	3	212	17	33	6
2460-3399	8	7	36	63	1	51	32	66	7
				Area 2**					
Average	--	7	8	20	1	18	17	33	7
320-480	4	6	0	4	1	15	6	20	8
481-960	6	6	2	10	1	0	1	26	4
961-1440	5	10	1	19	1	12	14	41	8
1441-1600	3	9	0	9	1	80	80	47	9
1601-3520	3	7	50	67	1	0	3	34	10
				Area 3***					
Average	--	6	2	10	1	8	5	26	5
240-480	13	6	0	7	1	5	7	23	3
481-892	8	6	2	12	1	0	0	30	7
893-1280	9	6	4	12	1	15	11	28	4
1281-2120	4	8	1	13	0	15	0	24	7

* Total of 128 operating units in T.18-23, R.14, Perkins County, 1936.
** " " 21 " " " " T.19, R.18, Corson County, 1936.
*** " " 34 " " " " T.12-13, R.19, Ziebach County, 1936.

Table 6.

Present Livestock Numbers Compared to Usual

Livestock	1936 Per cent of Usual Numbers		
	Area 1*	Area 2**	Area 3** *
Milk Cows	80	68	67
Beef Cows	61	52	25
Other Cattle	66	57	72
Brood Sows	33	23	30
Breeding Ewes	111	84	74
Other Sheep	89	92	47
Laying Hens	58	57	54
Horses	67	95	79

* Total of 128 operating units in T.18-23, R.14, Perkins County, 1936
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As previously pointed out, there are many small uneconomic farms in the three areas and this smaller size can not be offset to advantage by greater intensity. Small farms cause a concentration of people beyond the point where the land can possibly support them. Table 7 shows that the land area per person varies from 40 acres per person in the small size groups to 461 acres per person for the large size groups. There is no indication that the quality of the land in the smaller units is sufficiently better to compensate for the greater population it must support. This is an additional reason

Table 6.

Present Livestock Numbers Compared to Usual

Livestock	1936 Per cent of Usual Numbers		
	Area 1*	Area 2**	Area 3** *
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Table 7.

Amount of Land Per Person, By Size Groups

Size Operating Unit	Acres Per Person
Area 1*	
80-174	40
175-259	70
260-399	80
400-569	108
570-699	111
700-889	149
890-1200	138
1201-1859	300
1860-2459	349
2460-3399	461
Area 2**	
320-480	77
481-960	139
961-1440	240
1441-1600	253
1601-3520	410
Area 3***	
240-480	77
481-892	200
893-1280	284
1281-2120	249

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why a study of the size of unit is very important. There are many instances where families of less than 3 operate small units, and on the other hand, large families can be found on both large and small units. However, there is some relationship between the size of family and size of unit, Table 8. The size of family is a factor requiring consideration in a program involving immediate adjustment. For example, a small farm, occupied by an elderly couple is less in need of attention than a small farm occupied by a family with growing children.

The stability in farming operations is partly determined by the tenure of the operators. In Area 1, 46% of the operators have been on their farms more than 15 years, Area 2 62%, and Area 3 56%. Of this group a small percentage are young men, Table 9. The period from 1917 to 1921 was one of below normal rainfall, and only four of the families that settled in the area during that period still remain. However, 38% have a tenure from 20 to 29 years in Area 1, 43% in Area 2, and 50% in Area 3.

Another factor affecting the stability of farming operations is the ownership of the operating units. In Area 1, as shown by Fig. 10, there are only 11 full owners out of 128 operators while there are 65 part owners, and 52 tenants. Most of those who are full owners have only small units, Fig. 11. This makes it evident that only a small amount of owner-operated land remains in Area 1, but considerable land is still privately owned. These factors all contribute to instability in the farming operations.

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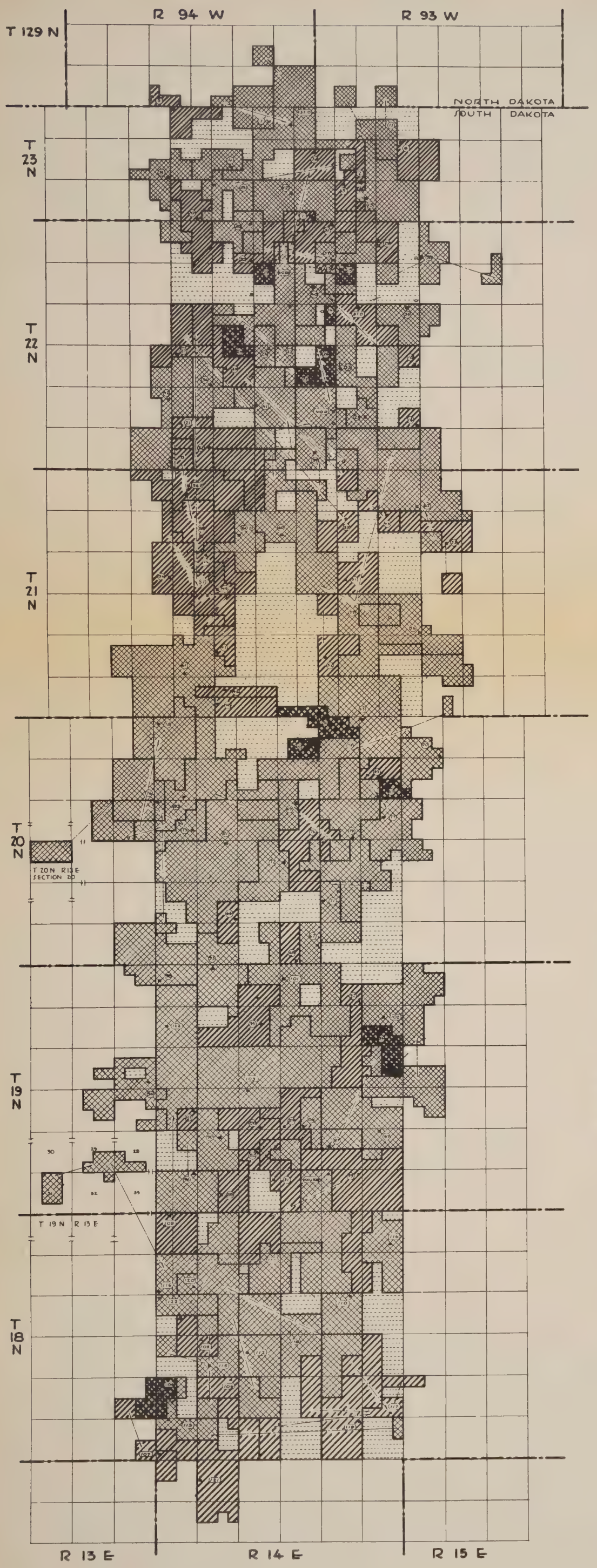


OPERATING UNITS CLASSIFIED BY TENURE

·LEGEND·

	UNITS
FULL OWNERS	11
OWNERS ADDITIONAL	65
TENANT	52

- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- OCCUPIED FARMSTEAD
- UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

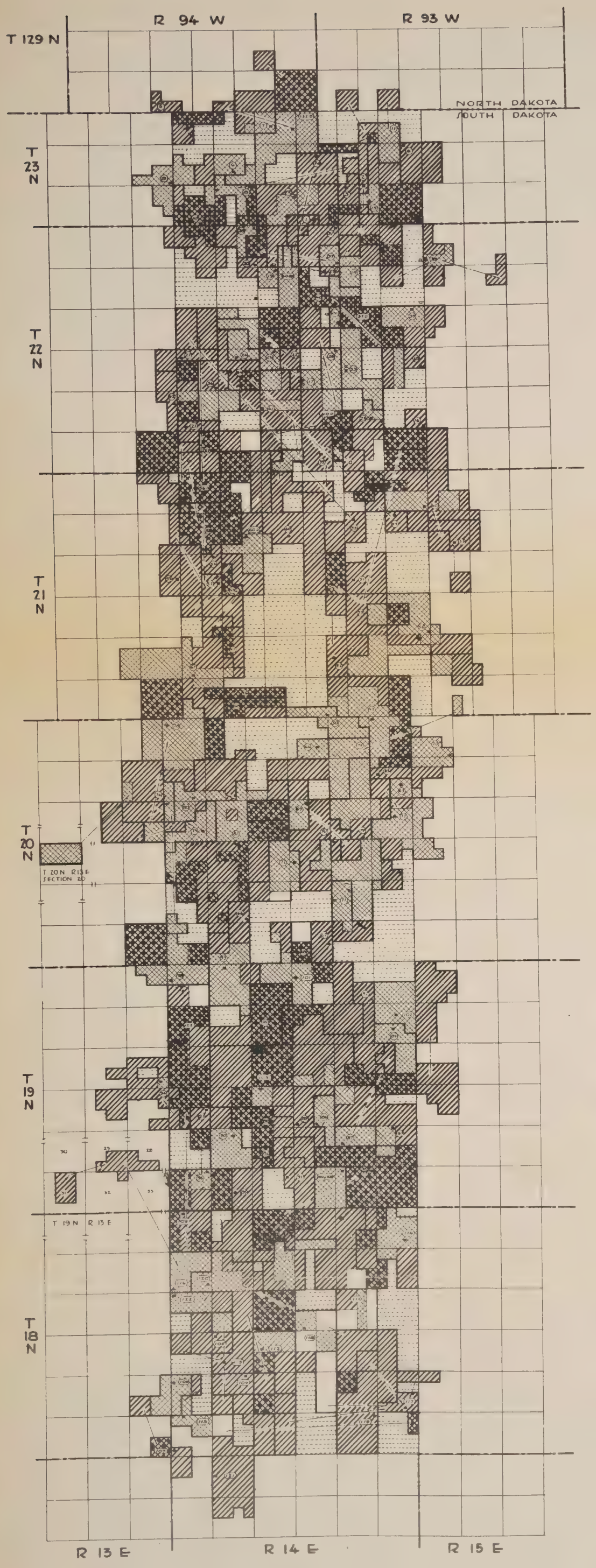
SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

PREPARED BY
LAND USE PLANNING SECTION
LAND UTILIZATION DIVISION
RESETTLEMENT ADMINISTRATION
REGION VII
U.S.D.A.

FIGURE 10



TYPE OF OWNERSHIP AND RELATIONSHIP TO OPERATING UNIT PATTERN

·LEGEND·

- OWNER-OPERATED
- OTHER PRIVATELY OWNED
- CORPORATE OWNED
- COUNTY OWNED LAND
- STATE RURAL CREDIT LD.
- STATE SCHOOL LAND
- PUBLIC DOMAIN
- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- OCCUPIED FARMSTEAD
- UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

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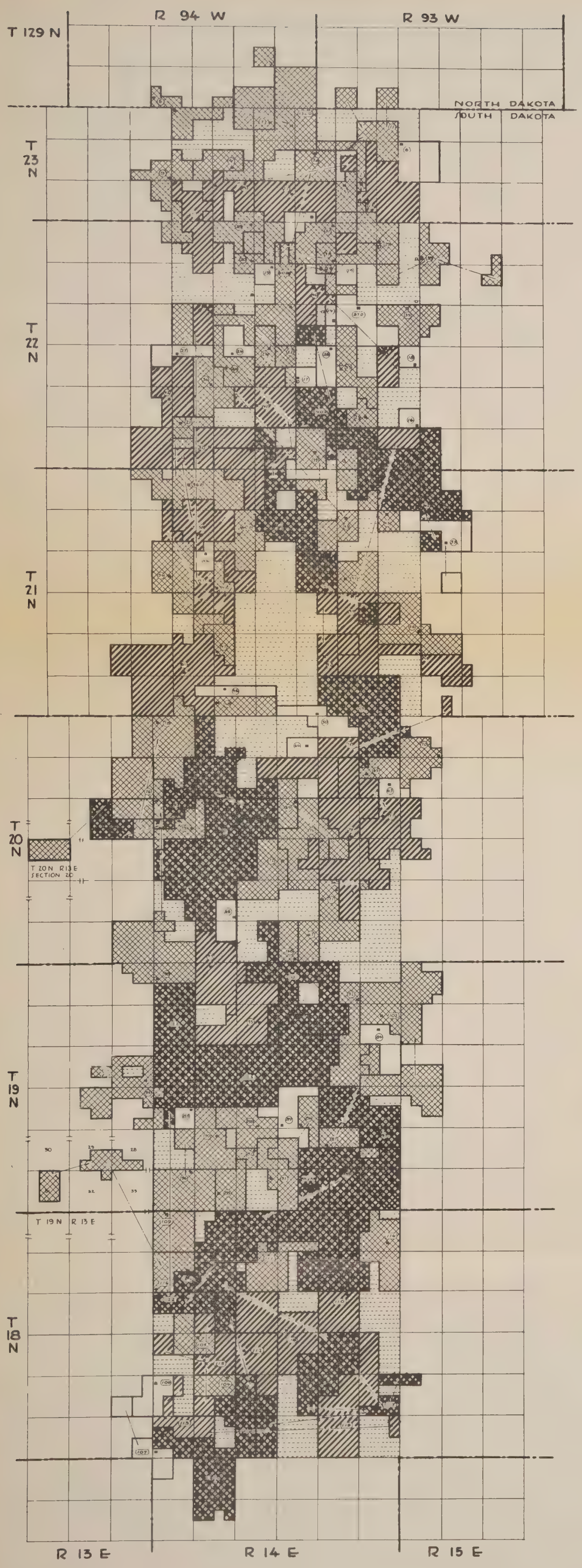
RESETTLEMENT ADMINISTRATION
REGION VII
U.S.D.A.

FIGURE 11



NUMBER OF OWNERSHIPS PER OPERATING UNIT

·LEGEND·

	UNITS
1 OWNERSHIP	24
2-3 OWNERSHIPS	65
4-6 OWNERSHIPS	24
7-13 OWNERSHIPS	15

OPERATING UNIT BOUNDARY
FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
SECTION LINE
TOWNSHIP LINE
③ OPERATING UNIT NUMBER
OCCUPIED FARMSTEAD
UNOCCUPIED FARMSTEAD
AREA UNACCOUNTED FOR

SCALE OF MILES
0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

PREPARED BY
LAND USE PLANNING SECTION
LAND UTILIZATION DIVISION
RESETTLEMENT ADMINISTRATION
REGION VII
U.S.D.A.

FIGURE 12

Table 8

Number of Members in the Family, in Relation to Size of Operating Unit.

Number Members in Family	Operating Units	Size Operating Units, and Number of Families in Each: 1 to 174	175 to 259	260 to 399	400 to 569	570 to 699	700 to 889	890 to 1200	1201 to 1859	1860 to 2459	2460 to 3399
Total	128	8	8	14	17	16	17	17	14	9	8
1	20	5	3	4	4	2	1			1	
2	11		1	4		1	2		3		
3	7		2	1	1	1		1		1	
4	21	1		1	2	2	4	1	4	2	4
5	21	1	1		5	1	5	4	3		1
6	10			1	1	3	2	1	2		
7	4				1	1		1		1	
8	10	1		1	1	2		2	1	1	1
9	6				1			2	1	1	1
10	13		1	2	1	2	2	3		2	
11	4					1	1	1			1
12											
13											
14	1							1			

Total of 128 operating units T. 23 to T. 18, R. 14, Perkins County, 1936

Table 9

Years on the Present Operating Unit

Years on Present Operating Unit	Area 1* No. of Opert'g Units	Area 1* Per Cent	Area 2** No. of Opert'g Units	Area 2** Per Cent	Area 3*** No. of Opert'g Units	Area 3*** Per Cent
Total	128	100	21	100	34	100
1-4	34	27	2	9	9	26
5-9	22	17	1	5	1	3
10-14	13	10	5	24	5	15
15-19	4	3	1	5	2	6
20-24	13	10	5	24	5	15
25-29	36	28	4	19	12	35
30-34	4	3	2	9	0	0
No report	2	2	1	5	0	0

* Total of 128 operating units in T.18-23, R.1[illegible], Perkins County,1936
** " " 21 " " " " T.19,R.18, Corson County,1936
*** " " 34 " " " " T.12-13,R.19,Ziebach County,1936

The effect of a complicated ownership pattern is further reflected in Fig. 12, showing the number of ownerships per operating unit. This map reveals that 24 units are held by one owner, 65 by 2 to 3 owners, 24 by 4 to 6 owners, and 15 by 7 to 13 owners. Table 10 gives the number of ownerships or tax tracts in Area 1. A tax tract is any tract of land considered as one unit for taxation purposes, and one individual may own several tracts. These tracts usually run 160 acres or less, primarily because most of the

Table 10

Tax Tract Ownership Classification, March 1, 1935 1/

Township and Range	Operating Units		Tax Tracts		Number of Tax Tract Ownerships									
					Private				Public					
					Owner Operated		Absentee Owned		Rural Credit		County		Corporate	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Area	128	100	1005	100	330	33	523	52	89	9	47	5	16	1
23-14	15	12	88	9	30	34	44	50	1	1	13	15	0	0
22-14	32	25	173	17	44	25	110	64	8	5	9	5	2	1
21-14	22	17	200	20	54	27	109	54	29	15	8	4	0	0
20-14	19	15	199	20	114	57	63	32	11	6	8	4	3	1
19-14	22	17	184	18	51	28	95	51	32	17	5	3	1	1
18-14	18	14	161	16	37	24	102	63	8	5	4	2	10	6

1/ Does not represent number of separate owners. These are the assessed tracts of land as listed on the County Tax List.

Total of 128 operating units, T.23 - T.18, R. 14, Perkins County, South Dakota, 1936.

land was first homesteaded in these amounts and the tract thus recorded. There are 1005 tax tracts in the six townships in Area 1. Of this number 33% are owner-operated, 52% are absentee owned, 14% publicly owned, and 1% corporate owned.

Much of the land has reverted to the county because of a heavy tax burden. Taxes levied per acre, during the 10 year period 1925-1936, Table 11, varies widely. Of the total taxes levied over the 10 year period, 75% has been paid. The 25% which has not been paid, as shown in Table 12, is represented by delinquent taxes, tax contracts, lost on tax deed land, and some which is due but not delinquent. Taxes paid by individual townships ranged from 67% to 82%.

A trend toward still more publicly owned land is evidenced by Fig. 13, showing the tax status of land. This map also indicates land already publicly owned. This trend creates the problem of the management of publicly owned land in order to secure revenue in place of former taxes, to conserve range resources, and to avoid repetition of present distress.

Table 11

Assessed Value, Taxes Levied and Paid
Per Acre, 1926 - 1935

Township and Range	Average Assessed Value Per Acre	Tax levied, 1926-35: Average Per Acre	Tax levied, 1926-35: Total per Acre	Tax paid, 1926-1935: Average Per Acre	Tax paid, 1926-1935: Total Per Acre from 1926-1935	Per cent paid
Area	7.41	.20	2.03	.15	1.52	75
23-14	9.63	.26	2.58	.17	1.72	67
22-14	9.26	.21	2.14	.14	1.42	67
21-14	7.02	.18	1.80	.15	1.47	82
20-14	6.54	.16	1.57	.12	1.24	79
19-14	6.10	.14	1.42	.10	1.02	72
18-14	7.23	.30	2.99	.24	2.36	79

T. 23 to T. 18, R. 14, Perkins County, 1936.

Table 12

Tax History Summary, By Townships, 1926-1935 1/

Township and Range	Taxes Levied	Taxes Paid	Due and Delinquent November 15,1936 2/	Due and not Delinquent Sept. 1, 1936 3/	Amount Put on Tax Contract	Tax Lost On T.D.Land From 1926-1935	Tax Lost On T.D.Land Before 1926 4/
Area	238,931	178,841	39,229	2,636	8,465	9,159	3,400
23-14	24,265	16,158	3,676	838	929	2,664	553
22-14	46,379	30,866	10,677	1,798	1,665	1,296	527
21-14	38,962	31,836	4,975	-	1,104	836	405
20-14	33,561	26,467	4,563	-	1,129	1,419	826
19-14	30,837	22,139	5,164	-	1,630	1,751	507
18-14	64,927	51,375	10,174	-	2,008	1,193	582

1/ Column 2 minus column 3 does not equal columns 4 plus 5 plus 6 plus 7, because county records frequently included tax levied for a particular year in which, at the same time, a tax deed was taken before that tax was due. The unaccounted delinquency for each township is a negligible factor.

2/ Amounts shown in T. 23 and 22, and Range 14 were tabulated as of September 1, 1936.

3/ Amounts shown in T. 21, 20, 19, 18, Range 14 were tabulated as of November 15, 1936. T. 23 to T. 18, R. 14, Perkins County, 1936.

4/ Tax lost on tax deed land taken between 1926-1935 due to delinquencies on levies prior to 1936. Not included in column 7.

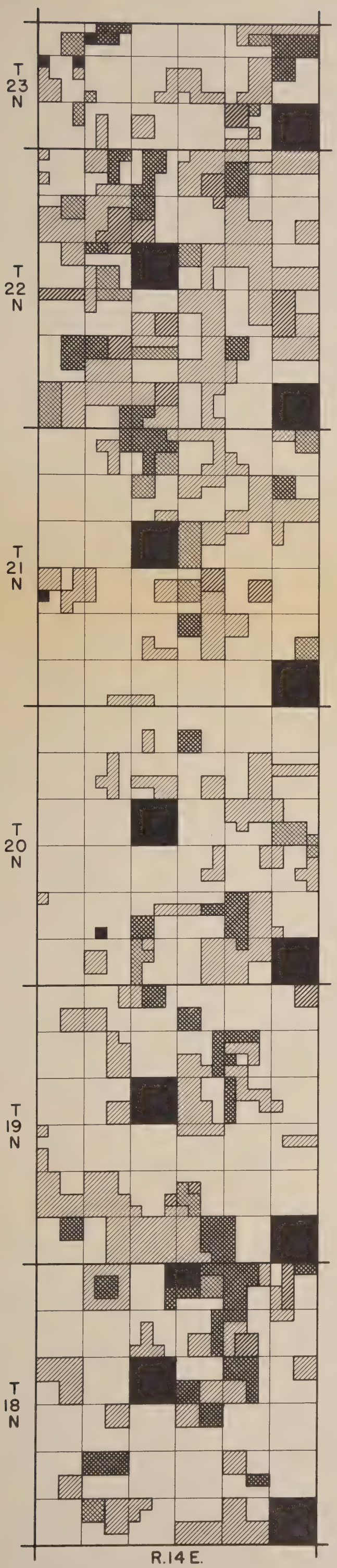


FIGURE - 13
TAX STATUS OF LAND AS OF JAN. 1, 1937
IN
TOWNSHIPS 18-23N., RANGE 14 E.
PERKINS COUNTY, SOUTH DAKOTA

LEGEND

- LAND ON WHICH COUNTY DOES NOT HOLD TAX SALE CERTIFICATE
- 1932 AND PRIOR SALES NOW SUBJECT TO TAX DEED
- 1933 SALE
- 1934 SALE
- 1935 SALE
- PUBLICLY OWNED LAND

SCALE OF MILES
0 1 2

PREPARED BY
UNITED STATES DEPARTMENT OF AGRICULTURE
RESETTLEMENT ADMINISTRATION-REGION 7
LAND UTILIZATION DIVISION
LAND USE PLANNING SECTION

FIGURE 13

LAND USE ADJUSTMENTS

The material thus far presented indicates certain maladjustments. To aid in determining the necessary adjustment in type and size of operating unit, each operator was asked for his opinion as to the minimum size which would support an average family. Figure 14 is a presentation of those opinions for Area 1. It is evident that there is great variation in their recommendations as to the size of business necessary to support a family. The same is true of Figure 15, which shows the opinions of the operators in Area 2 and 3.

It seems reasonable to assume that the range in size is partly accounted for by the operators being in doubt as to what might constitute a minimum, and also due to the fact that the minimum would vary according to the type of land and unit the operator had in mind. However, it was assumed that those recommending under 880 acres were suggesting farming, those recommending 880 to 1600 acres were suggesting a combination of farming and ranching, and those recommending a greater acreage had ranching in mind. These assumptions may not be entirely correct, but it is a possible explanation of the recommendations. It is apparent that many of those recommending a size under 880 acres should have recommended more crop land, or in the event these operators were not recommending farms, they should have recommended more grass land so the unit could have been classified as a combination farm and ranch.

The opinions do indicate that there are too many small farms in the area. If an adjustment would be made, based on the opinions of the people in the area, many small farms would be displaced and others enlarged.

The relationship between the amount of land suitable for crop production and the amount suitable only for grazing, largely determines the type and size of operating unit best adapted to this general region. A reconnaissance survey of all crop land in Area 1 was conducted to determine existing maladjustments in present land use and to classify the land now being cropped into its most desirable use. From this data adjustments necessary in type and size of operating unit could be determined.

To differentiate between the land now cropped, that which could continue in crops, and that which is better adapted to grazing use, individual fields were usually considered as the smallest unit except in a few cases where it was necessary to subdivide larger fields. The desirable use of the land was determined on the basis of physical characteristics alone. Inherent physical and chemical characteristics of the soil as expressed in the profile, together with relief, degree of solinization (saltiness) and stoniness, were the basic factors considered in determining the natural capabilities of the crop land.

GROUP I - FARMS
1 - 879 ACRES

GROUP II - COMBINATION FARM AND RANCH
880 - 1599 ACRES

GROUP III - RANCHES
1600 - 6300 ACRES

219

6140
5173
6300

200 150 100 50 0 500 1000 1500 2000 2500 3000 3500 4000

ANIMAL UNITS

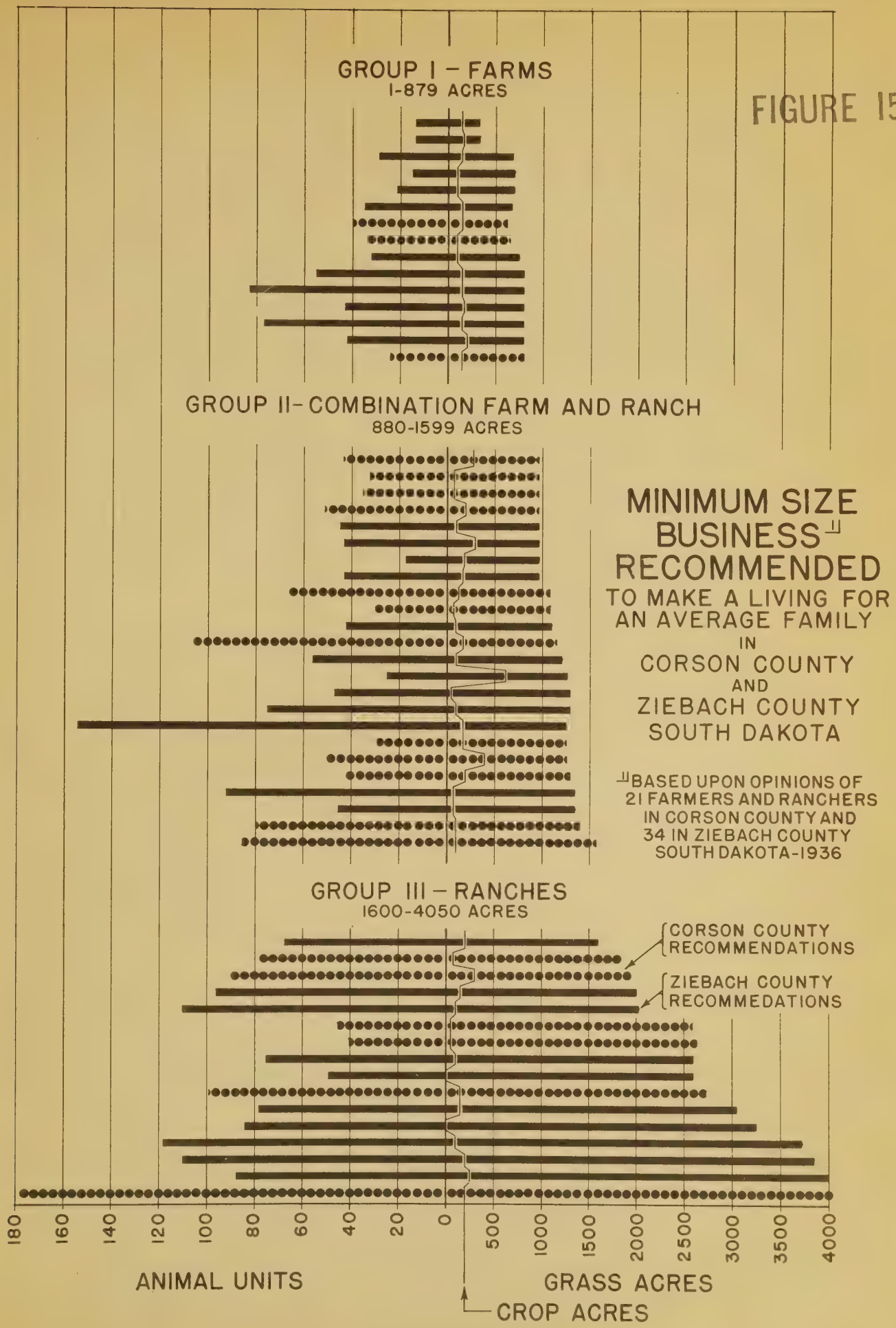
ACRES

MINIMUM SIZE OF BUSINESS[1] REQUIRED TO MAKE A LIVING FOR AN AVERAGE FARM FAMILY IN PERKINS COUNTY, S. D.

[1] BASED UPON THE OPINIONS OF 120 FARMERS AND RANCHERS IN SIX SELECTED TOWNSHIPS IN PERKINS COUNTY, SOUTH DAKOTA, 1936.

ANIMAL UNITS — CROP ACRES — GRASS ACRES

FIGURE 15



MINIMUM SIZE BUSINESS[1] RECOMMENDED

TO MAKE A LIVING FOR AN AVERAGE FAMILY IN CORSON COUNTY AND ZIEBACH COUNTY SOUTH DAKOTA

[1] BASED UPON OPINIONS OF 21 FARMERS AND RANCHERS IN CORSON COUNTY AND 34 IN ZIEBACH COUNTY SOUTH DAKOTA-1936

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Land now under cultivation, which is characterized by infertile and shallow soil was classified as land better suited for grazing use. Continuous cultivation of such soils increases oxidation of the original low organic content, and subsequently reduces the water holding capacity, the amount of available nutrients, and alters the soil structure. These soils then become subject to wind erosion. Many solonized (alkaline) soils, because of their toxic effect on plant growth, are classified as better adapted to grazing use.

The land classified as suitable for continued crop production is characterized by a deep friable soil from brown to dark brown in color. Soils suited to cultivation have a depth varying from 18 to 24 inches. The texture may vary from fine sandy loam to clay loam, although loams and silt loams are the most desirable for general cropping purposes.

Before starting the field work on the reconnaissance crop land survey in Area 1, a base map, using data obtained from the farm schedules, was prepared showing present land use. This map was prepared to aid in the field work during the classification of the crop land.

Factors, such as distance to market, size and shape of fields, the relationship between the amount of crop land and the amount of grazing land, and other economic and social criteria, were given no consideration.

From this survey a map was prepared showing the classification of cultivated land according to use suitability, Figure 16. This map shows that 17,364 acres, or 48 % of the land now being cropped, is better suited for grazing use.

In this classification the land now in grass was not specifically classified. It was apparent, however, that nearly all land which can be used for crop purposes has already been put to that use. This is further evidenced by Figure 17 showing the use suitability of one township in Area 1. There is very little land now in grass which could be cropped.

The classification of land permitted an examination of the adequacy of the operating units, and each unit was classified according to adjustments required. The classification of each unit is based on the extent of, and relationship between the amount of land suitable for crop purposes and that only adapted for grazing use, as they are related to the size and type of unit.

In classifying the operating units, the following types and sizes were considered to be the minimum which would afford an adequate living for the average family. These criteria are naturally useful only as a guide, expressing a desirable balance between amounts of crop and grazing land. Numerous other combinations of crop and grazing land were arbitrarily accepted as equivalent. The average of the units considered adequate is much above the minimum

CLASSIFICATION OF CULTIVATED LAND ACCORDING TO USE-SUITABILITY, SHOWN IN RELATION TO OPERATING UNIT PATTERN

· LEGEND ·

- CULTIVATED LAND SUITABLE FOR GRAZING USE
- CULTIVATED LAND SUITABLE FOR CROPPING USE
- LAND NOW IN GRASS
- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- OCCUPIED FARMSTEAD
- UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

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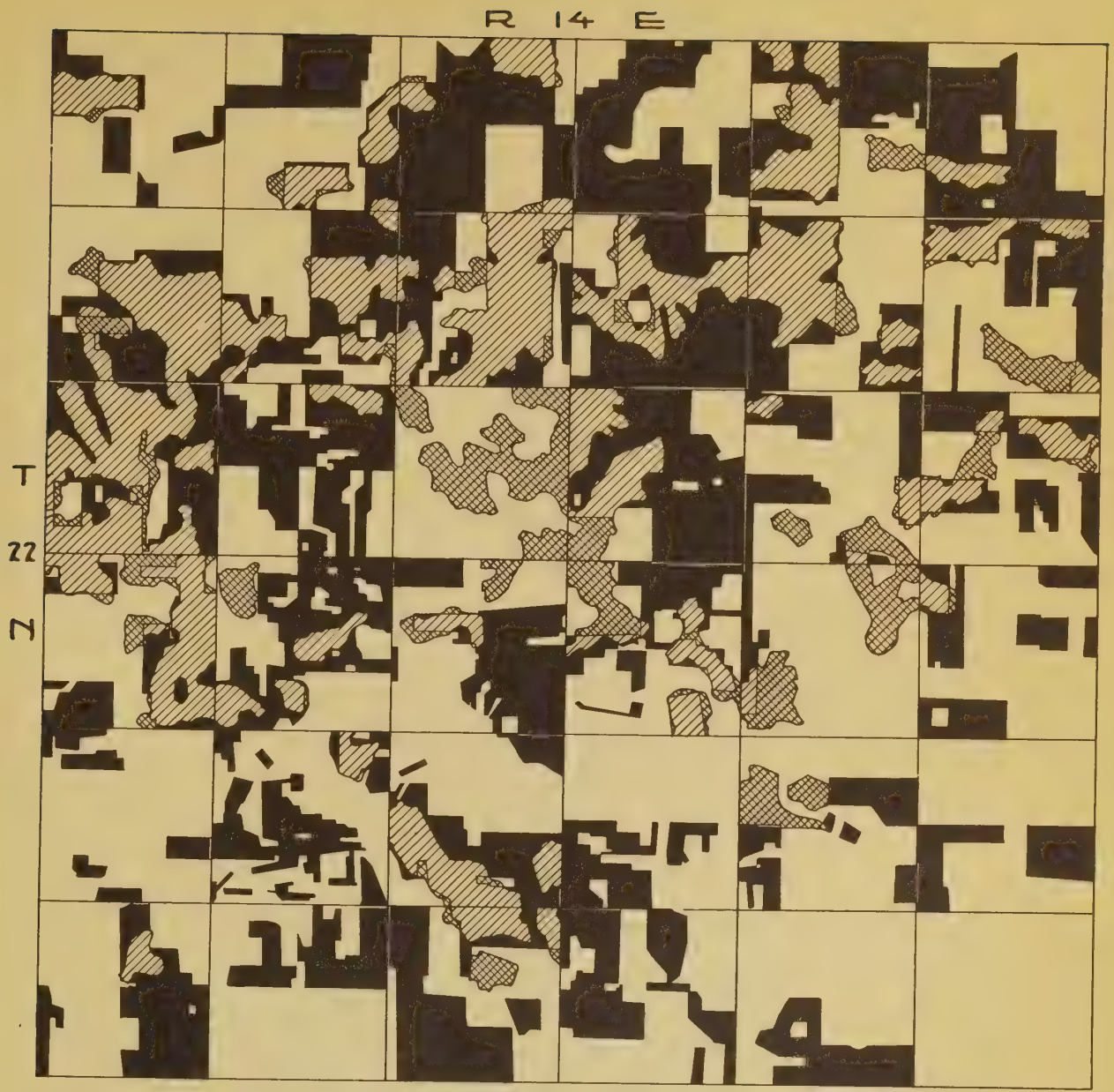
FIGURE 16

FIGURE 17



LEGEND

LAND NOW CULTIVATED

- WHICH IS NOT SUITED TO CROP PRODUCTION
- WHICH IS SUITED TO CROP PRODUCTION

NATIVE GRASSLAND

- WHICH IS SUITED TO CROP PRODUCTION
- WHICH IS SUITED TO GRAZING USE

— FIELD BOUNDARY OR SECTION LINE

USE-SUITABILITY OF LAND IN RELATION TO THE PRESENT USE

SCALE OF MILES
0 1/2 1

MAG. NORTH

DATA FROM PLANETABLE SURVEYS OF CULTURAL FEATURES-SOILS AND PRESENT LAND USE LIBERTY TOWNSHIP - PERKINS COUNTY - SO. DAKOTA '36

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outlined. The average of those considered inadequate falls much below the minimum.

A. Ranching Type

Approximately 75 head of cattle

" 80 acres feed crops

" 1600 acres grazing land

B. Ranching-Farming Type

Approximately 25 to 50 head of cattle

" 160 acres crops (feed and cash grain)

" 800 acres grazing land

C. Farming Type

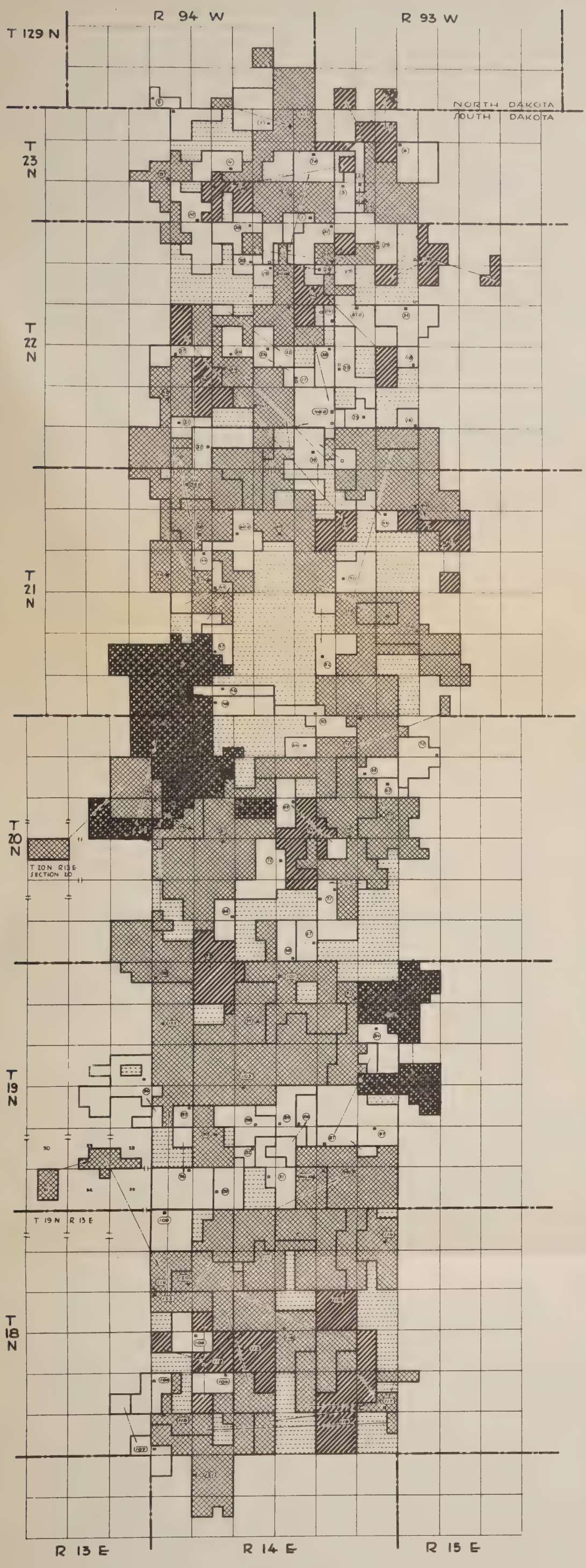
Approximately 25 head of cattle

" 210 acres crop land (cash grain predominating)

" 430 acres grazing land.

Carrying capacity of 30 animal units per section, and crop land production averaging 10 bushels of wheat per acre by practicing summer fallow every third year, were assumed. As actual conditions varied from this, changes in minimum sizes were necessary.

From the total of 128 operating units in Area 1, 58 were considered to be adequate in size. Of the 58, 4 were ranches, 41 were combination farming-ranching, and 13 were farms, Fig. 18. Most of those units requiring adjustments are in the northern part of Area 1. There also are some concentrated in the southern part of Area 1,



OPERATING UNITS OF ADEQUATE SIZE, CLASSIFIED BY TYPE

· LEGEND ·

	UNITS
RANCH	4
COMBINATION FARMING AND RANCHING	41
FARM	13

- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- OCCUPIED FARMSTEAD
- UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES
0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

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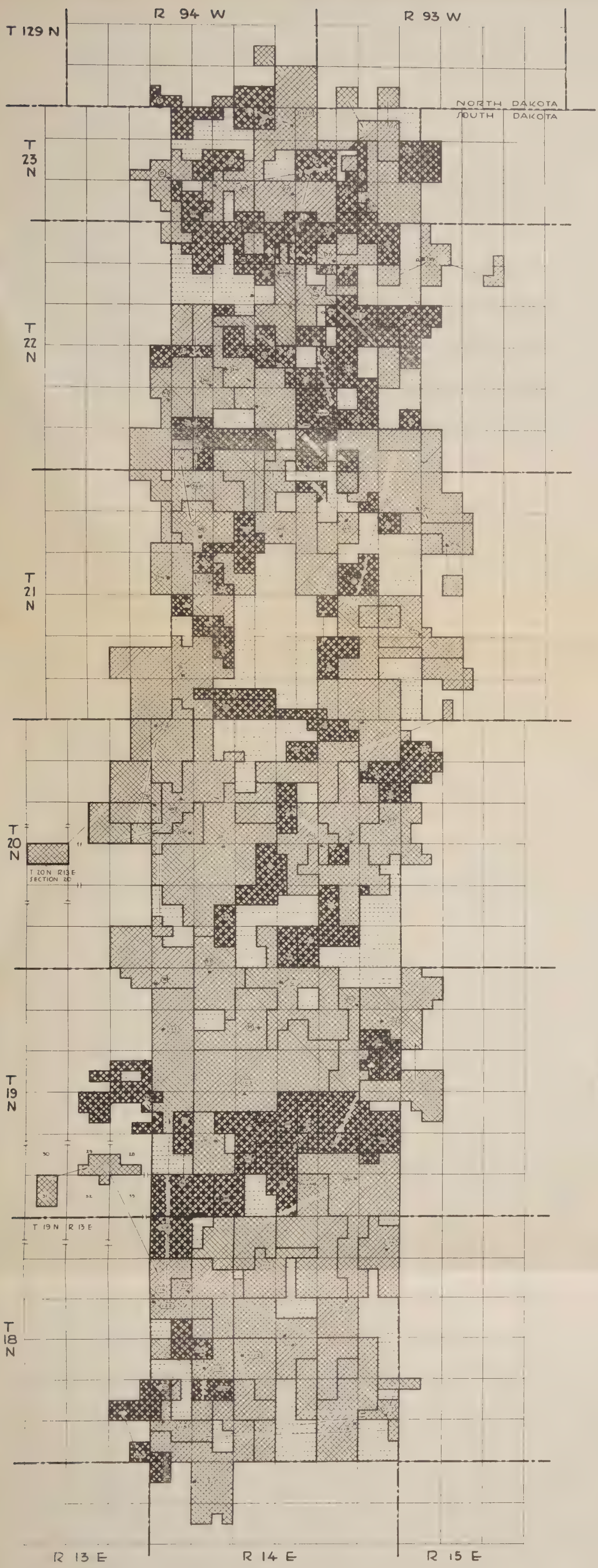
FIGURE 18

Figure 19. In this classification, the need of the particular operator on the place received no consideration, but it was based entirely on the size required by the average family.

Those units considered to be inadequate in size were classified according to the land requirements. There were 70 units out of 128 which were considered inadequate and of these, 23 required additiomal grass land, 9 required additional crop land, and 38 others required both additional crop land and grass land. They are classified accordingly in Figure 20.

As already indicated a study of land utilization must consider the factor of taxation and the influence of taxes on land use. In this connection it was necessary to measure the relation of the present assessment values to the productivity ratings prepared from the detailed soils survey of one township in Area 1 previously shown in Figure 3.

The tax delinquency status shows a heavy tax burden, but it became necessary to further determine the under or over-assessment of individual tracts. For this purpose the assessed valuations and the productivity ratings were put on a comparable basis. This was accomplished by or adjusting the values based upon productivity so their total equalled the total of the present assessed valuation of the tracts. (The mean assessed valuation was computed and assigned to the mean productivity rating. All tracts were then given a value on the basis of productivity ratings as related to the value placed



OPERATING UNITS CLASSIFIED ON THE BASIS OF NEED FOR ADJUSTMENT

·LEGEND·

	UNITS
UNITS OF ADEQUATE SIZE	38
UNITS REQUIRING MORE GRAZING LAND OR MORE CROP LAND, OR BOTH	70

- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- ▪ OCCUPIED FARMSTEAD
- ▫ UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES

0 1

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23 N, RANGE 14 E PERKINS COUNTY, SOUTH DAKOTA, 1936

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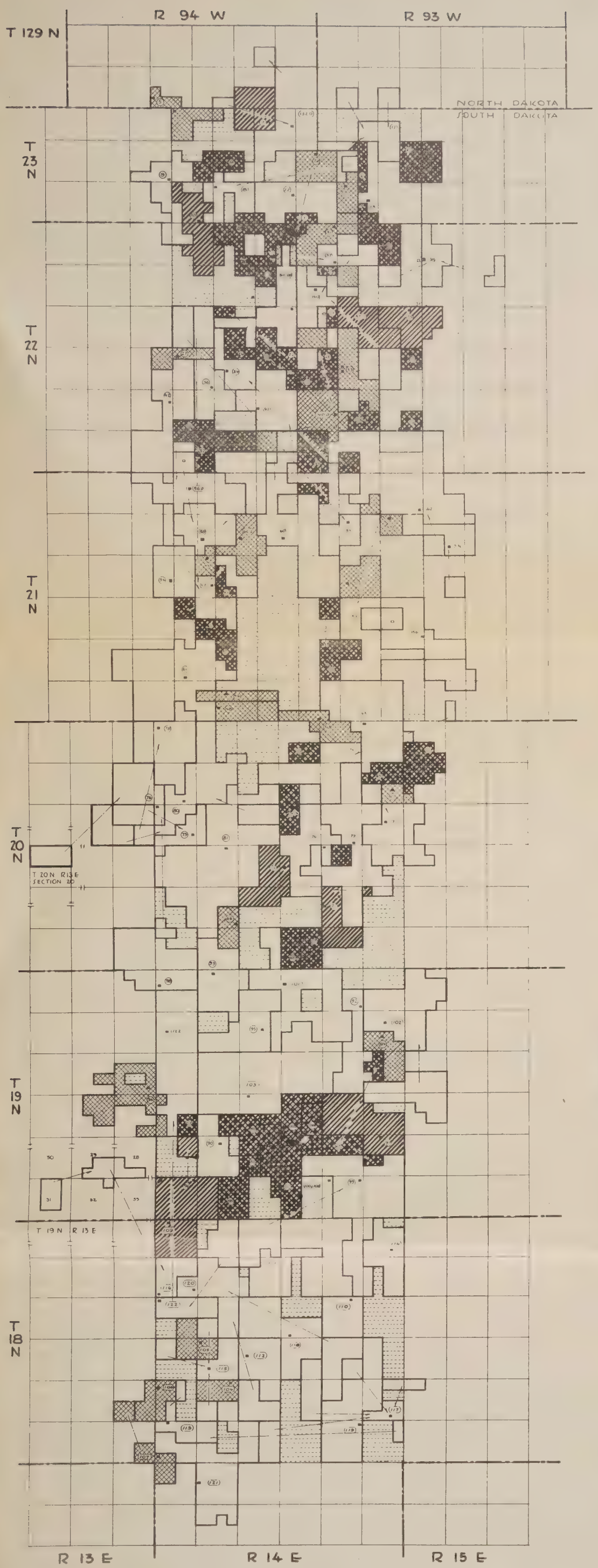

OPERATING UNITS OF INADEQUATE SIZE CLASSIFIED ACCORDING TO ADDITIONAL LAND REQUIREMENTS

· LEGEND ·

	UNITS
UNITS REQUIRING ADDITIONAL GRASS LAND	23
UNITS REQUIRING ADDITIONAL CROP LAND	9
UNITS REQUIRING ADDITIONAL CROP AND GRASS LAND	38

- OPERATING UNIT BOUNDARY
- FROM NON-CONTIGUOUS TRACT TO OPERATOR'S HEADQUARTERS
- SECTION LINE
- TOWNSHIP LINE
- ③ OPERATING UNIT NUMBER
- ▪ OCCUPIED FARMSTEAD
- □ UNOCCUPIED FARMSTEAD
- AREA UNACCOUNTED FOR

SCALE OF MILES

0 1

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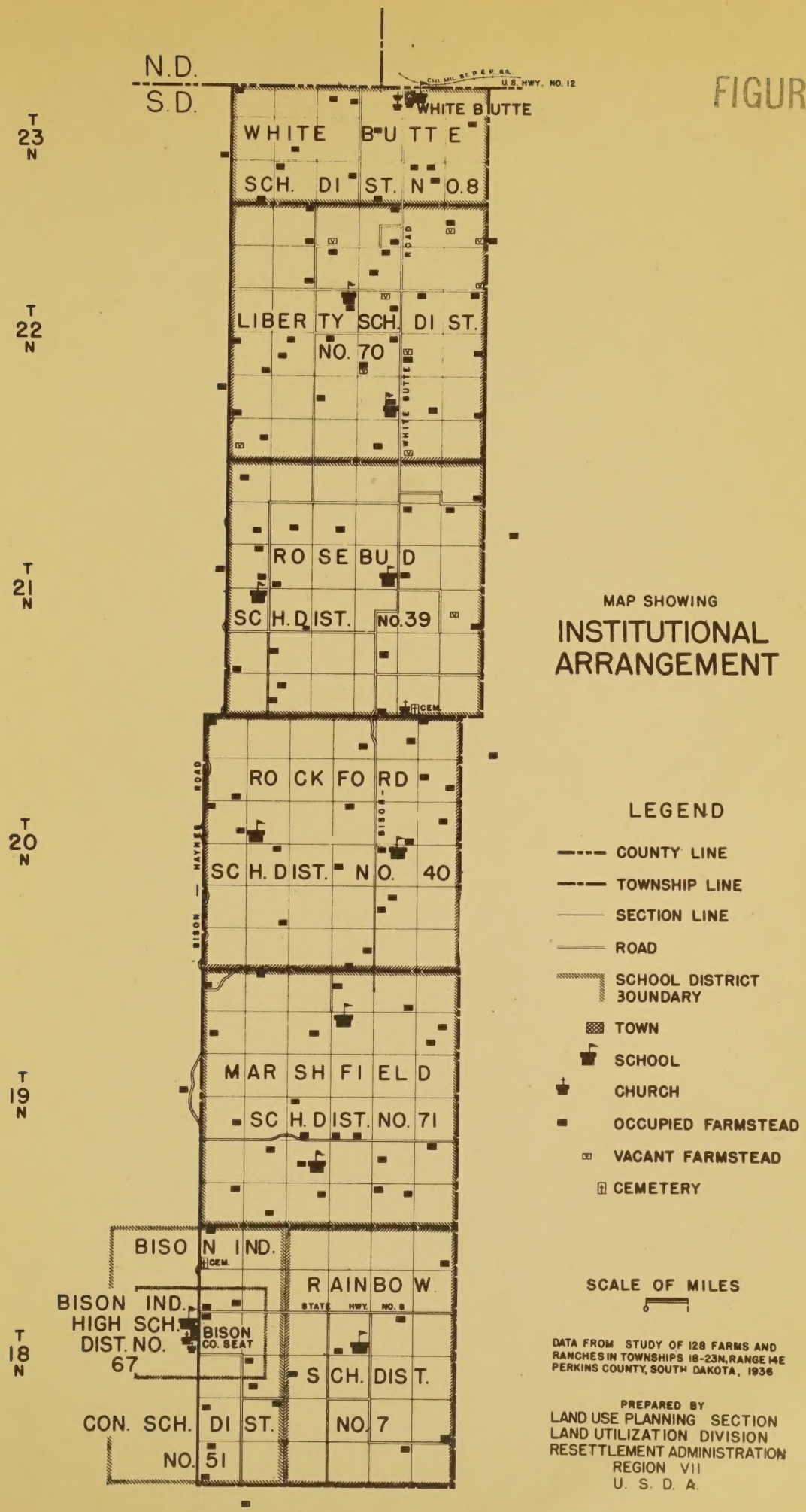
FIGURE 20

on the mean productivity rating. An assessment ratio was then computed by dividing the present valuation by the productivity valuation. Where this ratio exceeds 100, the tract is now over-assessed, if it is less than 100 it is under-assessed.)

It is evident, from Fig. 21, that land of low productivity is greatly over-assessed, and land of high productivity is under-assessed, on the basis of equality of taxation between tracts. Actually, on the basis of productivity, nearly all land is over-assessed and consequently over-taxed. Over-taxing land in an area, such as this, seems to encourage additional expansion of crop production to land suited only for grazing. Adjusting taxes to the productivity of the land will aid in bringing about proper land use.

FIGURE 22



MAP SHOWING

INSTITUTIONAL ARRANGEMENT

LEGEND

- COUNTY LINE
- TOWNSHIP LINE
- SECTION LINE
- ROAD
- SCHOOL DISTRICT BOUNDARY
- TOWN
- SCHOOL
- CHURCH
- OCCUPIED FARMSTEAD
- VACANT FARMSTEAD
- CEMETERY

SCALE OF MILES

DATA FROM STUDY OF 128 FARMS AND RANCHES IN TOWNSHIPS 18-23N, RANGE 14E PERKINS COUNTY, SOUTH DAKOTA, 1936

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